to the Bay's water resources; to consider means of improving and maintaining the Bay's fisheries; and, to recommend means of improving the environmental quality of the Bay area.

The bills would authorize to be appropriated to the Chesapeake Bay Office the sum of $500,000 for each of three fiscal years for the purposes of carrying out this program.

We are forwarding on to Subcommittee Chairman Eagleton our formal legislative report on the two measures. However, I did want to let you know personally our present thinking on this legislation.

Although we fully endorse the concepts and major goals of the bills, we do not favor enactment of either measure. In our view, the legislation is unnecessary, as a coordinating mechanism already exists for this purpose.

Such a mechanism to coordinate all Federal research, development, and monitoring of ocean pollution, which would include the Chesapeake Bay, is the National Ocean Pollution Research and Development and Monitoring Planning Act of 1978 (PL 95-273). Under this law, the Department of Commerce (NOAA) has the lead role in consultation with other appropriate Federal officials with authority over ocean pollution, research, development, and monitoring programs in preparing a comprehensive five-year plan called for under the law and in implementing a coordinated program for Federal activities in this area. EPA has been working closely with NOAA and other Federal agencies in developing the first plan, particularly in the identification of national needs and the establishment of priorities.

In addition to our cooperative work with NOAA and other Federal agencies under the 1978 law, as you know, EPA has been actively involved in our own water quality improvement programs on the Chesapeake Bay for many years. Our on-going grant making, enforcement, monitoring and analysis, and environmental review activities derive primarily from the mandates of the Federal Water Pollution Control Act of 1972

best copy available

(PL 92-500), the Clean Water Act Amendments of 1977 (PL 95-217), the Marine Protection, Research and Sanctuaries Act of 1972 (PL 92-532), and the National Environmental Policy Act (PL 91-190). These EPA activities take place on the Chesapeake Bay and its drainage basin as well as nationwide and complement each other to collectively abate environmental degradation.

We have also established an in-house ADP system which is coordinating all the data related to the Bay being developed under EPA programs. We are also reviewing other data bases in order to prevent duplication between our data sets and those of local, State, and other Federal agencies. These non-EPA data sets are also being incorporated into our own system as appropriate.

As you know, we have taken an additional role in this area through our five-year Chesapeake Bay Study. This study, begun in the fall of 1976, has examined the causes of the Bay's chemical, physical, and biological problems and the existing management structures to implement Baywide solutions to these problems.

In light of these on-going EPA programs, especially as they relate to State and areawide water quality management planning programs, State programs implementing the National Pollutant Discharge Elimination System program (NPDES), and other State-Federal efforts under the Clean Water Act Amendments, we would view the establishment by S. 1316 of another separate entity with managerial and priority-setting responsibilities as being potentially duplicative and overlapping.

We also note that neither measure would provide for representation from the State of Pennsylvania. We believe that the failure to include such a representative overlooks the fact that the Susquehanna River, a major tributary of the Chesapeake Bay, is a major contributor to the Bay area's water quality.

As you continue to be so helpful to the Agency on matters relating to the Bay and in many other ways, I certainly regret having to send you a negative assessment of these measures. However, we would be less than candid if we did not state our concerns about the interruption to our programs and the potential duplication which would result from the enactment of this legislation.

Thank you for giving us the opportunity to respond to you on this issue. My staff will be forwarding on to the Subcommittee as quickly as possible the data you requested for the hearing record.

Sincerely yours,

Douglas M. Costle

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF THE
ADMINISTRATOR

SEP 8 1980

Honorable Charles McC. Mathias, Jr.
United States Senate
Washington, D.C. 20510

Dear Senator Mathias,

In further response to your letter of August 4, 1980, to Administrator Costle, I am enclosing the information on the funding of EPA research activities related to the Chesapeake Bay for inclusion in the hearing record on S. 1316 and H.R. 4417, as passed.

We note that your letter requests figures on total funding for Bay-related research for each year since 1970. As you know, EPA's five-year Chesapeake Bay program began in fiscal year 1977 and was the first major water quality research effort in the Chesapeake Bay area. Prior to the initiation of the program, environmental quality studies of the area consisted of limited scale investigations of the Bay and some of its major tributaries by the Region III Annapolis Field Office. Studies were also conducted by designated areawide water quality management planning agencies using funds authorized under Sections 208 and 303(e) of the Federal Water Pollution Control Act, as amended. Most of these efforts focused on specific localized problems and were not conducted from the standpoint of a Baywide approach.

It is for this reason that the detailed information we have enclosed begins at FY 1977. The breakdown of total funding for each year since FY 1977 for Chesapeake Bay research is as follows.

FY 1977	$5.0 million
FY 1978	$5.4 million
FY 1979	$4.9 million
FY 1980	$4.9 million

If we may be of any further assistance in providing materials for the hearing record, please do not hesitate to contact us.

Sincerely yours,

Susanne L. Wellford

Susanne L. Wellford
Acting Director
Office of Legislation

Enclosures

INTRODUCTION

Recognizing that the Chesapeake Bay is a unique and fragile national resource subject to heightened competition among potential users as Bay-area populations continue to expand rapidly, the 94th Congress authorized EPA to conduct an indepth study of the Chesapeake Bay to assess the principal factors having adverse impacts on its environmental quality and to direct and coordinate a program of research and abatement that will efficiently address those factors.

EPA implemented this initiative through the Chesapeake Bay Program (CBP) which is focused upon (1) identifying and improving governmental coordination and participation, (2) coordinating pollution research to identify source, transport, fate, physical properties and control alternatives, (3) developing and maintaining a two-way dialogue with the Bay public to assure that the Government is responsive to the interests of the citizens, and (4) directing all phases of data management from collection through analysis and information dissemination.

In keeping with the traditional partnership atmosphere that has characterized the CBP from its outset, EPA and representatives from the State Water Control Board in Virginia and the Water Resources Administration in Maryland, along with Bay area citizens, met during October 1977 for a 3-day workshop to define the future research areas for the Program. The purpose was to identify Bay-area environmental problems and define a management structure for the Bay Program that ensured the continued and full involvement of the State agencies and the public throughout all phases of the Program.

The significant products of that intensive workshop were: (1) the identification of 10 problem areas threatening the environmental health of the Chesapeake Bay, and (2) the definition of a management structure that includes EPA, State personnel and interested citizens on a hierarchical series of committees and work groups that range from policy setting to working staff level arrangements.

In the technical program areas, 10 major study areas were identified:

(1) High Priority

- (a) Toxics
- (b) Eutrophication
- (c) Submerged Aquatic Vegetation

(2) Medium Priority

- (a) Shellfish Bed Closure
- (b) Fisheries Modification
- (c) Dredging and Spoil Disposal
- (d) Hydrologic Modifications

(3) Low Priority

- (a) Wetlands Alteration
- (b) Shoreline Erosion
- (c) Water Quality Effects of Boating and Shipping

The Program has, to date, focused upon the high priority areas. In addition to the technical program areas, a data management system was developed to provide information storage/retrieval services for all aspects of the Program.

Enclosed is a listing of all projects, both inhouse (within EPA) and extramural, that have been funded with Chesapeake Bay Program monies. Also enclosed is the projected projects that could be funded in fiscal year 1981. These projects are described in a generic format and their initiation will be subject to availability of funds and EPA and Chesapeake Bay Program priorities.

CHESAPEAKE BAY PROGRAM
Projected Projects
Fiscal Year 1981

1. State Participation - continuation of the three state agreements (Maryland, Virginia, Pennsylvania) to allow their uninterrupted participation in the Chesapeake Bay Program.

2. Public Participation - continuation of the public participation effort to ensure effective citizen involvement in all aspects of the Chesapeake Bay Program.

3. Data Management - continued contract support to provide for data entry, analysis and retrival for all CBP research and management efforts.

4. Toxics - subestuary studies to determine the role of the tributary estuaries relative to the transport of toxic materials discharged into fresh water reaches and their availability to the Bay proper.

5. Nutrients - continuation of nonpoint source (NPS) modelling efforts to quantify loadings to the tributary systems and project year 2000 loadings based on selected population and land use growth scenarios and possible control alternatives.

6. Water Quality Modelling - continuation of modelling efforts to conduct operational runs of a Baywide hydrodynamic model and to model water quality in the Bay proper. Water quality modelling will take NPS loads developed in the nutrient study and identify and project problem areas for selected scenarios.

7. Fall-line Monitoring - continuation of the interagency agreement to obtain a third year of data on inputs to the Chesapeake Bay from its three major tributaries.

8. Wet-Dry Percipitation - continuation of the aerial input projects to semi-quantify wet and dry fall inputs to the Bay.

9. Submerged Aquatic Vegetation Herbicides and Turbidity - continuation of SAV projects to further define the relationship of herbicides and sediment induced turbidity as they impact baygrass populations.

10. Environmental Quality Management - continued management study to identify management alternatives that are feasible and could be available to Bay managers and regulators in the control of problem areas.

STATE PARTICIPATION PROJECTS

DEVELOPMENT AND COORDINATION OF TECHNICAL ASSESSMENTS, SCIENTIFIC PLANNING AND DATA ORGANIZATION FOR THE CHESAPEAKE BAY PROGRAM

STATE OF MARYLAND

PRINCIPAL INVESTIGATOR(S):

William Davidson

PROJECT NUMBER:

R805874O1

PERFORMING ORGANIZATION:

Water Resources Administration
Maryland Department of Natural Resources
Tawes State Office Building
Annapolis, Maryland 21401

EPA PROJECT OFFICER:

William Cook

BUDGET:

EPA Share $453,094

PROJECT PERIOD:

Begin 1/11/78

OBJECTIVES:

Primary program objective is to facilitate state participation in all phases of the Chesapeake Bay Program. Assistance and support will be provided to EPA through planning, technical support and assistance, data compilation and processing, scientific planning and technical program development and implementation.

CHESAPEAKE BAY PROGRAM DEVELOPMENT AND IMPLEMENTATION OF AN ENVIRONMENTAL PLANNING PROCESS TO PROVIDE ENVIRONMENTAL PROTECTION OF THE CHESAPEAKE BAY

PRINCIPAL INVESTIGATOR(s):

Louis Bercheni

PROJECT NUMBER:

X-003220

PERFORMING ORGANIZATION:

Pennsylvania Department of Environmental Resources
P.O. Box 2063
Harrisburg, Pennsylvania 17120

EPA PROJECT OFFICER:

William Cook

BUDGET:

EPA Share $71,862

PROJECT PERIOD:

Begin - 2/1/80
End - 1/31/81

OBJECTIVES:

Primary program objective is to facilitate state participation in all phases of the Chesaepake Bay Program. Assistance and support will be provided to EPA through planning, technical support and assistance, data compilation and processing, scientific planning and technical program development and implementation.

DATA ORGANIZATION, TECHNICAL SUPPORT AND COORDINATION FOR THE ENVIRONMENTAL PROTECTION AGENCY"S CHESAPEAKE BAY PROGRAM COMMONWEALTH OF VIRGINIA

PRINCIPAL INVESTIGATOR(s):
Robert V. Davis

PROJECT NUMBER:
R805859

PERFORMING ORGANIZATION:
Virginia State Water Control Board
2111 N. Hamilton Street
Richmond, Virginia 23230

EPA PROJECT OFFICER:
Gregory McGinty

BUDGET:
EPA Share $421,936

PROJECT PERIOD:
Begin - 6/5/78
End - 9/30/82

OBJECTIVES:

Primary program objectives is to facilitate state participation in all phases of the Chesapeake Bay Program. Assistance and support will be provided to EPA through planning, technical support and assistance, data compilation and processing, scientific planning and technical program development and implementation.

PUBLIC PARTICIPATION PROJECTS

CHESAPEAKE BAY PROGRAM'S PUBLIC PARTICIPATION PROGRAM

PRINCIPAL INVESTIGATOR(s):
George H. Hagerman

PROJECT NUMBER:
T900748

PERFORMING ORGANIZATION:
Citizens Program for the Chesapeake
Bay, Inc.
5 East Queen Way
Hampton, VA 23669

EPA PROJECT OFFICER:
Anthony Donatoni

BUDGET:
EPA Share..................$283,407
Performing Organization
Share...................... 20,197
TOTAL......................$303,604

PROJECT PERIOD:
Begin - 10/01/77
End - 09/30/78

OBJECTIVES:

The objectives of the Public Participation Program are: (1) to raise the level of public awareness concerning the environment of the Chesapeake Bay, (2) to increase the public's understanding of the Chesapeake Bay Program and its goals and objectives, (3) to provide Chesapeake Bay Program management with citizen input concerning the Bay, (4) and to involve the public in the Program's decisionmaking process.

CHESAPEAKE BAY PROGRAM'S PUBLIC PARTICIPATION PROGRAM

PRINCIPAL INVESTIGATOR(s):
Frances Flanigan

PROJECT NUMBER:
T900879

PERFORMING ORGANIZATION:
Citizens Program for the Chesapeake
Bay, Inc.
6600 York Road
Baltimore, Maryland 21212

EPA PROJECT OFFICER:
William Cook

BUDGET:
EPA Share $383,704

PROJECT PERIOD:
Begin - 10/01/78
End - 1/31/80

OBJECTIVES:

This project continues the work of the first-year program executed under project number T900748 with the objectives of: (1) raising the level of public awareness and understanding of the Chesapeake Bay Program's goals and objectives, and (2) providing program management with citizen input concerning the Bay and the Bay program.

CHESAPEAKE BAY PROGRAM'S PUBLIC PARTICIPATION PROGRAM

PRINCIPAL INVESTIGATOR(s):
Frances Flanigan

PROJECT NUMBER:
T901099

PERFORMING ORGANIZATION:
Citizens Program for the Chesapeake
Bay, Inc.
6600 York Road
Baltimore, Maryland 21212

EPA PROJECT OFFICER:
William Cook

BUDGET:
EPA Share $278,503

PROJECT PERIOD:
Begin - 1/01/80
End - 12/31/80

OBJECTIVES:

This project continues the work of the previous years' program initiated under T900879 with the objectives of: (1) raising the level of public awareness and understanding of the Chesapeake Bay Program's goals and objectives, and (2) providing program management with citizen input concerning the Bay and the Bay program.

BASELINE SEDIMENT STUDIES TO DETERMINE DISTRIBUTION, PHYSICAL PROPERTIES, SEDIMENTATION BUDGETS AND RATES

PRINCIPAL INVESTIGATOR(s):
John M. Ziegler

PROJECT NUMBER:
R806001

PERFORMING ORGANIZATION:
Department of Geological Oceanography
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

EPA PROJECT OFFICER:
Owen Bricker

BUDGET:
EPA Share $630,442

PROJECT PERIOD:
Begin - 7/10/78
End - 12/31/80

OBJECTIVES:

This is a companion project of work being performed by the Maryland Geological Survey for Maryland waters under grant number R805965. This project has three objectives: (1) determining the distribution and physical properties of Bay sediments, (2) identifying sites of erosion and deposition in the Lower Bay, and (3) developing a total sediment budget for the Bay. This study is concerned with the Virginia portion of the Chesapeake Bay. It provides a coordinating base for other Virginia Institute of Marine Science efforts in the Toxics Program.

CHESAPEAKE BAY EARTH SCIENCE STUDY - SEDIMENTOLOGY OF THE CHESAPEAKE BAY

PRINCIPAL INVESTIGATOR(s):
Randall T. Kerhin

PERFORMING ORGANIZATION:
Maryland Geological Survey
Chesapeake Bay Earth Science Study
The Johns Hopkins University
Baltimore, Maryland 21218

BUDGET:

EPA Share	$307,535

PROJECT NUMBER:
R805965

EPA PROJECT OFFICER:
Owen Bricker

PROJECT PERIOD:
Begin - 7/24/78
End - 1/23/81

OBJECTIVES:

This is a companion project of work being performed by the Virginia Institute of Marine Science for Virginia waters under grant number R806001. This project has three objectives: (1) determining the distribution and physical properties of Bay sediments, (2) identifying sites of erosion and deposition in the Upper Bay, and (3) developing a total sediment budget for the Bay. This study is concerned with the Maryland portion of the Chesapeake Bay, and also provides a coordinating base for other Maryland Geological Survey efforts in the Toxics Program.

CHESAPEAKE BAY SEDIMENT TRACE METALS

PRINCIPAL INVESTIGATOR(s):
George R. Helz

PERFORMING ORGANIZATION:
Department of Chemistry
University of Maryland
College Park, MD 20742

BUDGET:

EPA Share	$143,765
Performing Organization Share	14,361
TOTAL	$158,126

PROJECT NUMBER:
R805954

EPA PROJECT OFFICER:
Owen Bricker

PROJECT PERIOD:
Begin - 7/17/78
End - 12/31/80

OBJECTIVES:

This project seeks to perform a geochemical survey of sediments in select portions of the Chesapeake Bay that will: (1) establish the present trace metal composition of Bay sediments, (2) allow estimation of the depositional flux of individual trace metals to the Bay bottom, and (3) permit compilation of an improved trace metal mass balance.

THE CHARACTERIZATION OF THE CHESAPEAKE BAY: A SYSTEMATIC ANALYSIS OF TOXIC TRACE ELEMENTS

PRINCIPAL INVESTIGATOR(s):
Howard Kingston

PROJECT NUMBER:
EPA-79-D-X0717
Interagency Agreement

PERFORMING ORGANIZATION:
Office of Environmental Measurements
Room A347, Chemistry Building
National Bureau of Standards
Washington, D.C. 20234

EPA PROJECT OFFICER:
Owen Bricker

BUDGET:
EPA Share $175,000

PROJECT PERIOD:
Begin - 3/26/79
End - 9/26/80

OBJECTIVES:

The objective is to provide analytical data to assist in determining the concentrations of up to 12 trace elements in the waters of the Bay.

INVESTIGATION OF ORGANIC POLLUTANTS IN THE CHESAPEAKE BAY

PRINCIPAL INVESTIGATOR(s):
Robert J. Huggett

PROJECT NUMBER:
R806012

PERFORMING ORGANIZATION:
Ecology Pollution Department
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

EPA PROJECT OFFICER:
Richard Purdy

BUDGET:
EPA Share $772,412
Performing Organization
Share 50,736
TOTAL $823,148

PROJECT PERIOD:
Begin - 7/17/78
End - 12/31/80

OBJECTIVES:

The objective of this project is to establish a system to detect, identify, and quantify toxic organic compounds of significance in the water column, in sediments, and in mollusk tissues from the Chesapeake Bay.

CHESAPEAKE BAY EARTH SCIENCE STUDY - INTERSTITIAL WATER CHEMISTRY

PRINCIPAL INVESTIGATOR(s):
James Hill

PROJECT NUMBER:
R805963

PERFORMING ORGANIZATION:
Maryland Geological Survey
The Johns Hopkins University
Baltimore, Maryland 21218

EPA PROJECT OFFICER:
Owen Bricker

BUDGET:
EPA Share $401,054

PROJECT PERIOD:
Begin - 7/01/78
End - 12/31/80

OBJECTIVES:

Interstitial water is a vehicle by which trace metals, nutrients, and soluble sediment constituents may be transported across the sediment/water interface. The four major project objectives are: (1) characterization of the composition as well as variations in the chemistry of interstitial water as a function of sediment type and position along the salinity gradient, (2) identification of sediment particle mineralogy, (3) interpreting the reactions that occur between the solid phases and the interstitial waters that control concentrations of dissolved species in the system, and (4) determining the mechanisms as well as assessing the extent of transfer across the sediment/water interface.

SEDIMENT AND PORE WATER CHEMISTRY

PRINCIPAL INVESTIGATOR(s):
S.Y. Tyree, Jr.

PROJECT NUMBER:
R805966

PERFORMING ORGANIZATION:
Department of Chemistry
College of William and Mary
Williamsburg, Virginia 23185

EPA PROJECT OFFICER:
Owen Bricker

BUDGET:
EPA Share $96,906

PROJECT PERIOD:
Begin - 7/01/78
End - 12/31/80

OBJECTIVES:

This project provides analytical support to the Interstitial Water Chemistry Project (grant number R805963, page 26) by performing chemical analyses on the pore water samples collected by the Maryland Geological Survey.

MONITORING PARTICLE-ASSOCIATED TOXIC SUBSTANCES AND SUSPENDED SEDIMENT IN THE CHESAPEAKE BAY

PRINCIPAL INVESTIGATOR(s):
Walter Taylor

PROJECT NUMBER:
R805959

PERFORMING ORGANIZATION:
The Johns Hopkins University
Chesapeake Bay Institute
4800 Atwell Road
Shady Side, Maryland 20867

EPA PROJECT OFFICER:
Owen Bricker

BUDGET:
EPA Share $203,438

PROJECT PERIOD:
Begin - 7/25/78
End - 11/30/80

OBJECTIVES:

This project evaluates the role of suspended sediment on the budget of toxic substances in the Chesapeake Bay. There are four major study objectives: (1) to make a seasonal characterization (chemical, physical) of suspended sediment in the water column in the main portion of the Bay and in selected major tributaries, (2) to determine exchanges of particle-associated toxics between selected tributaries and the main body of the Bay for average conditions as well as for more extreme levels of river discharge, (3) to evaluate various models of transport for particle-associated toxics, and (4) to establish rates and patterns of movements and deposition of particle-associated toxics.

FATE, TRANSPORT AND TRANSFORMATION OF TOXICS. SIGNIFICANCE OF SUSPENDED SEDIMENT AND FLUID MUD

PRINCIPAL INVESTIGATOR(s):
Maynard Nichols

PROJECT NUMBER:
R806002

PERFORMING ORGANIZATION:
Sedimentological Laboratory
Department of Geological Oceanography
Virginia Institute of Marine Science
Gloucester Point, VA 23062

EPA PROJECT OFFICER:
Lowell Bahner

BUDGET:
EPA Share $349,690

PROJECT PERIODS:
Begin - 9/01/78
End - 2/28/81

OBJECTIVES:

This study, which is a companion study of grant number R805959 investigates the role of suspended sediment and fluid mud in the fate of toxic metals in the Chesapeake Bay system. Of primary interest are: (1) spatial and temporal patterns of toxic metals in suspended sediments, (2) preferential states of suspended sediment (i.e., clay, organic matter, etc.) for toxic metals, and (3) rates and routes of contaminant transport from source to sink.

CHESAPEAKE BAY EARTH SCIENCE STUDY - ANIMAL SEDIMENT RELATIONSHIP

PRINCIPAL INVESTIGATOR(s):
Eli Reinharz

PROJECT NUMBER:
R805964

PERFORMING ORGANIZATION:
Maryland Geological Survey
Chesapeake Bay Earth Science Study
The Johns Hopkins University
Baltimore, Maryland 21218

EPA PROJECT OFFICER:
Owen Bricker

BUDGET:
EPA Share $131,223

PROJECT PERIOD:
Begin - 8/01/78
End - 2/28/81

OBJECTIVES:

This study is concerned with the Maryland portion of the Bay and is coordinated with a similar study being conducted by the Virginia Institute of Marine Science (grant number R805982). This study investigates the relationship of benthic fauna to bottom sediments and seeks to infer the role of benthic fauna in augmenting the exchange of dissolved material across the sediment-water interface.

THE BIOGENIC STRUCTURE OF CHESAPEAKE BAY SEDIMENTS

PRINCIPAL INVESTIGATOR(s):
Donald F. Boesch

PROJECT NUMBER:
R805982

PERFORMING ORGANIZATION:
Division of Biological Oceanography
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

EPA PROJECT OFFICER:
Owen Bricker

BUDGET:
EPA Share $91,007

PROJECT PERIOD:
Begin - 7/10/78
End - 9/30/80

OBJECTIVES:

This study is concerned with the Virginia portion of the Bay, and is coordinated with a similar project being conducted by the Maryland Geological Survey under grant number R805964 (page 30). This study investigates the relationships of benthic fauna to bottom sediments and infers the role of benthic fauna in augmenting the exchange of dissolved material across the sediment-water interface.

INVESTIGATION OF THE CHESTER RIVER OYSTER MORTALITY

PRINCIPAL INVESTOGATOR(s):
Charles Bostater
David Freeman (University of Md.)
Joseph Cooney (University of Md.)

PROJECT NUMBER:
R805976

PERFORMING ORGANIZATION:
Water Resources Administration
Maryland Department of Natural Resources
Tawes State Office Building
Annapolis, Maryland 21401

EPA PROJECT OFFICER:
Owen Bricker

BUDGET:
EPA Share $83,750

PROJECT PERIOD:
Begin - 7/24/78
End - 9/30/80

OBJECTIVES:
This project seeks to identify the causes of oyster mortaility in the Chester River.

INVENTORY AND TOXICITY PRIORITIZATION OF INDUSTRIAL FACILITIES DISCHARGING INTO THE CHESAPEAKE BAY BASIN

PRINCIPAL INVESTIGATOR(s):
Thomas Hopper

PROJECT NUMBER:
68-02-2607

PERFORMING ORGANIZATION:
GCA Corporation/Technology Division
Burlington Road
Bedford, Massachusetts 01730

EPA PROJECT OFFICER:
Donald Francisco

BUDGET:
EPA Share $83,356

PROJECT PERIOD:
Begin - 03/28/79
End - 09/30/79

OBJECTIVES:

The objective of this project is to identify industrial discharges of toxic chemical effluents in the Chesapeake Bay Basin. A point source assessment will be performed in order to determine the amount of wastewater effluent discharged, and the identity and concentration of possible toxic materials in respective effluent streams.

Both major and minor dischargers will be identified with respect to industrial and chemical factors.

TOXIC POINT SOURCE ASSESSMENT OF INDUSTRIAL DISCHARGES TO THE CHESAPEAKE BAY BASIN

PRINCIPAL INVESTIGATOR(s): Gary Rawlings	**PROJECT NUMBER:** 68-02-3161
PERFORMING ORGANIZATION: Monsanto Research Corporation P.O. Box 8, Station B Dayton, Ohio 45407	**EPA PROJECT OFFICER:** Donald Francisco
BUDGET: EPA Share $1,104,288	**PROJECT PERIOD:** Begin - 9/26/79 End -

OBJECTIVES:

The objective of this project is to develop a chemical screening protocol to detect potentially toxic point source discharges to the Chesapeake Bay and its tributaries. The protocol, following development, would be transfered to Bay area states for use in the permitting and regulatory process.

AQUEOUS EFFLUENT CONCENTRATIONS FOR BIOTESTING

PRINCIPAL INVESTIGATOR(s):	**PROJECT NUMBER:** 68-02-2566 68-02-1874 68-02-2681
PREFORMING ORGANIZATION: Northrop Services Monsanto Research Corporation Litton Bionetics	**EPA PROJECT OFFICER:** Shahbeg Sandhu
BUDGET: EPA Share $76,609 $23,391 $50,000	**PROJECT PERIOD:** Begin - 8/15/19 End - 9/30/80

OBJECTIVES:

This effort is a series of three projects designed to conduct various bioassay tests in conjunction with industrial effluent sampling done under project 68-02-3161.

BIOFRACTIONATION OF INDUSTRIAL DISCHARGES

PRINCIPAL INVESTIGATOR(s):	**PROJECT NUMBER:** 68-02-2686
PERFORMING ORGANIZATION: Batelle Memorial Institute	**EPA PROJECT OFFICER:** Shabeg Sandhu
BUDGET: EPA Share $100,000	**PROJECT PERIOD:** Begin - 8/15/79 End - 9/30/80

OBJECTIVES:

The objective of this effort is to conduct a biofractionation breakdown of selected industrial effluents to identify the toxic component.

EVALUATION OF BIOASSAY METHODOLOGY FOR APPLICATION TO CHESAPEAKE BAY AND OTHER ESTUARIES

PRINCIPAL INVESTIGATOR(s): L. Eugene Cronin M. Robertson	**PROJECT NUMBER:** R807148
PERFORMING ORGANIZATION: Chesapeake Research Consortium 1419 Forest Drive Annapolis, Maryland 21403	**EPA PROJECT OFFICER:** Richard Purdy
BUDGET: EPA Share $99,952	**PROJECT PERIOD:** Begin - 9/1/79 End - 8/31/80

OBJECTIVES:

The objective of this project is to conduct bioassays for a series of effluents using a set of native Chesapeake Bay species and compare the results to bioassay findings using standard organisms.

CHEMICAL ASSESSMENT OF ATMOSPHERIC INPUT TO THE UPPER CHESAPEAKE BAY

PRINCIPAL INVESTIGATOR(s):
James Hill

PROJECT NUMBER:
X-003225

PERFORMING ORGANIZATION:
Maryland Geological Survey
Chesapeake Bay Earth Science Study
2100 Guilford Avenue - Annex
Baltimore, Maryland 21218

EPA PROJECT OFFICER:
Owen Bricker

BUDGET:
EPA Share $42,210

PROJECT PERIOD:
Begin - 08/1/80
End - 06/30/82

OBJECTIVES:

This project is to collect wet and dry precipitation in the Chesapeake Bay area and conduct chemical analyses.

CHEMISTRY OF WET AND FRY FALL TO LOWER CHESAPEAKE BAY

PRINCIPAL INVESTIGATOR(s):
Terry L. Wade

PROJECT NUMBER:
X-003225

PERFORMING ORGANIZATION:
Old Dominion University
Research Foundation
Norfolk, Virginia 23508

EPA PROJECT OFFICER:
Owen Bricker

BUDGET:
EPA Share $30,000

PROJECT PERIOD:
Begin - 6/1/80
End - 9/30/80

OBJECTIVES:

This project is to collect wet and dry precipitation in the Chesapeake Bay area and conduct chemical analyses.

SUBMERGED AQUATIC VEGETATION PROJECTS

FACTORS AFFECTING AND IMPORTANCE OF SUBMERGED AQUATIC VEGETATION IN CHESAPEAKE BAY

PRINCIPAL INVESTIGATOR(s):
Fant Martin
Walter Valentine

PROJECT NUMBER:
EPA-78-D-X0391

PERFORMING ORGANIZATION:
Migration Bird and Habitat
Research Laboratory
U.S. Fish and Wildlifè Service
Laurel, Maryland 20811

EPA PROJECT OFFICER:
William Cook

BUDGET:
EPA Share $261,372

PROJECT PERIOD:
Begin - 8/01/78
End - 3/31/81

OBJECTIVES:

The project will (1) determine the relationship of SAV to migratory waterfowl in the Bay, and (2) prepare a synthesis of data on SAV and interpret the role of SAV in the Bay ecosystem.

DISTRIBUTION OF SUBMERGED VASCULAR PLANTS IN THE CHESAPEAKE BAY, MARYLAND - 1978

PRINCIPAL INVESTIGATOR(s):
Richard R. Anderson

PROJECT NUMBER:
R805977

PERFORMING ORGANIZATION:
Department of Biology
The American University
Washington, D.C. 20016

EPA PROJECT OFFICER:
William Cook

BUDGET:
EPA Share $137,397

PROJECT PERIOD:
Begin - 6/01/78
End - 1/31/80

OBJECTIVES:

This study, a companion project of grant number R805951 seeks to (1) establish an inventory of SAV distribution and species concentration in Maryland waters, and (2) assess the usefulness of archival aerial photography for estimating trends in distribution and abundance in the Bay.

DISTRIBUTION AND ABUNDANCE OF SAV IN THE LOWER CHESAPEAKE BAY, VIRGINIA - 1978

PRINCIPAL INVESTIGATOR(s):
Robert J. Orth

PROJECT NUMBER:
R805951

PERFORMING ORGANIZATION:
Department of Invertebrate Ecology
Virginia Institute of Marine Science
Gloucester Point, VA 23062

EPA PROJECT OFFICER:
William Cook

BUDGET:
EPA Share $68,681

PROJECT PERIOD:
Begin - 6/01/78
End - 8/15/79

OBJECTIVES:

There are three project objectives: (1) to map the present distribution of SAV beds in the saline portions of the Bay in Virginia, (2) to determine changes in SAV distribution in parts of the Lower Bay over a 40-year period, and (3) to map SAV distribution in selected freshwater portions of the subestuaries. A companion study (grant number R8055977, is being conducted by The American University.

DISTRIBUTION AND ABUNDANCE OF SUBMERGED AQUATIC VEGETATION IN THE LOWER CHESAPEAKE BAY - 1979

PRINCIPAL INVESTIGATOR(s):
Robert J. Orth

PROJECT NUMBER:
X-003201-01

PERFORMING ORGANIZATION:
Department of Invertebrate Ecology
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

EPA PROJECT OFFICER:
William Cook

BUDGET:
EPA Share $18,436

PROJECT PERIOD:
Begin - 6/01/79
End - 9/30/80

OBJECTIVES:

This project continues the research of grant number R805951 and will: (1) identify those areas in the Lower Chesapeake Bay that contain stands of SAV with emphasis on the saline regions, (2) obtain high-quality aerial imagery of those areas that contain significant SAV, (3) delineate SAV species type and distribution in areas which have dense SAV, and (4) determine if significant alterations have occurred in comparison to the similar study conducted in 1978. This work is similar to work performed by the Chesapeake Bay Foundation (grant number X-00-3202-01) for the Maryland portion of the Bay.

DISTRIBUTION OF SUBMERGED AQUATIC VEGETATION IN CHESAPEAKE BAY, MARYLAND - 1979

PRINCIPAL INVESTIGATOR(s):
Robert J. Macomber

PROJECT NUMBER:
X-003202-01

PERFORMING ORGANIZATION:
Chesapeake Bay Foundation
"The Church"
Prince George & East Streets
Box 1704
Annapolis, Maryland 21404

EPA PROJECT OFFICER:
William Cook

BUDGET:
EPA Share $56,430

PROJECT PERIOD:
Begin - 6/15/79
End - 8/30/80

OBJECTIVES:

This study largely continues the activities of grant number R805977. The two project objectives are: (1) to establish a 1979 inventory of SAV distribution and species concentration in Maryland waters, and (2) to compare 1979 with 1978 SAV inventory for identification of gross change in SAV distribution and abundance. The companion study to this project is grant number X-003201-01.

BIOSTRATIGRAPHY OF THE CHESAPEAKE BAY: A FEASIBILITY STUDY

PRINCIPAL INVESTIGATOR(s):
Grace S. Brush

PROJECT NUMBER:
R805962

PERFORMING ORGANIZATION:
Department of Geography &
Environmental Engineering
The Johns Hopkins University
34th and Charles Streets
Baltimore, Maryland 21218

EPA PROJECT OFFICER:
William Cook

BUDGET:
EPA Sharing $134,675

PROJECT PERIOD:
Begin - 07/01/78
End - 3/31/80

OBJECTIVES:

The project investigates the feasibility of obtaining scientific information for Chesapeake Bay management from stratigraphic analysis of sediments. Changes in SAV populations, eutrophication, and sedimentation rates are defined over past time periods of a few hundred years or more and correlated with natural events and human activity.

BIOSTRATIGRAPHY OF THE CHESAPEAKE BAY AND ITS TRIBUTARIES

PRINCIPAL INVESTIGATOR(s):
Grace S. Brush

PROJECT NUMBER:
R806680

PERFORMING ORGANIZATION:
Department of Geography and
Environmental Engineering
The Johns Hopkins University
34th and Charles Streets
Baltimore, Maryland 21218

EPA PROJECT OFFICER:
William Cook

BUDGET:
EPA Share $99,285

PROJECT PERIOD:
Begin - 11/01/79
End - 05/31/81

OBJECTIVES:

This project expands the work done by the feasibility study conducted under grant number R805962. The project will study the natural cycles of SAV and diatom populations over several hundred years, and correlate deviations from these cycles resulting from human impacts or natural events. Sedimentation rates will be studied and relationships to the natural events and land use changes will be established.

ZOSTERA MARINA:

BIOLOGY, PROPAGATION AND IMPACT OF HERBICIDES

PRINCIPAL INVESTIGATOR(s):
Robert J. Orth

PROJECT NUMBER:
R805953

PERFORMING ORGANIZATION:
Department of Invertebrate Ecology
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

EPA PROJECT OFFICER:
William Cook

BUDGET:
EPA Share $326,815

PROJECT PERIOD:
Begin - 7/17/78
End - 1/15/81

OBJECTIVES:

This project is aimed at developing a technology for establishing and propagating eelgrass (*Zostera marina*) and for determining the impact of herbicides on the grass. A subobjective is the definition of biological and cultural factors affecting eelgrass propagation.

SUBMERGED AQUATIC VEGETATION IN THE CHESAPEAKE BAY: ITS ROLE IN THE BAY ECOSYSTEM AND FACTORS LEADING TO ITS DECLINE

PRINCIPAL INVESTIGATOR(s):
J. Court Stevenson
W.M. Kemp
W.R. Boynton

PROJECT NUMBER:
R805932

PERFORMING ORGANIZATION:
University of Maryland
Center for Environmental and Estuarine Studies
Horn Point Environmental Laboratories
P.O. Box 775
Cambridge, Maryland 21613

EPA PROJECT OFFICER:
William Cook

BUDGET:
EPA Share $780,810

PROJECT PERIOD:
Begin - 07/15/78
End - 12/14/80

OBJECTIVES:

Project objectives are: (1) to identify toxicity and stress levels of herbicides, turbidity and their synergistic effects on SAV, (2) to examine critical pathways and mechanisms of herbicides and turbidity in relation to SAV, (3) to identify the ecological function of SAV, (4) to evaluate economic and energetic costs and benefits of various watershead practices, (5) to develop nutrient, sediment and herbicide budgets for the Patuxent and Choptank subestuaries, and (6) to evaluate management options for controlling causative factors in the decline of SAV.

THE FUNCTIONAL ECOLOGY OF SUBMERGED AQUATIC VEGETATION IN THE LOWER CHESAPEAKE BAY

PRINCIPAL INVESTIGATOR(s):
Richard L. Wetzel
Robert J. Orth
John V. Merriner
Donald F. Boesch
Kenneth L. Webb

PROJECT NUMBER:
R805974

PERFORMING ORGANIZATION:
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

EPA PROJECT OFFICER:
William Cook

BUDGET:
EPA Share $742,183

PROJECT PERIOD:
Begin - 07/01/78
End - 12/31/80

OBJECTIVES:

This project will qualitatively and quantitatively investigate the functional ecological relationships in submerged seagrass communities in the Lower Chesapeake Bay. The resulting data and experimental approaches should: (1) enhance basic understanding, and (2) establish criteria for environmental assessment.

STUDIES ON THE VALUE OF VEGETATED HABITATS AND THEIR ROLES AS NURSERY AREAS AND SHELTER FROM PREDATION WITH EMPHASIS ON UTILIZATION BY COMMERCIALLY EXPLOTED SPECIES

PRINCIPAL INVESTIGATOR(s):
Kenneth L. Heck, Jr.

PROJECT NUMBER:
R806151

PERFORMING ORGANIZATION:
Academy of Natural Sciences of
Philadelphia
Benedict Estuarine Research Laboratory
Benedict, Maryland 20612

EPA PROJECT OFFICER:
William Cook

BUDGET:
EPA Share $48,726

PROJECT PERIOD:
Begin - 08/01/78
End - 12/31/80

OBJECTIVES:

This project seeks to test the hypothesis that beds of SAV (1) contain significantly larger number of invertebrates that adjacent unvegetated areas, (2) harbor significantly greater concentrations of juveniles of commercially valuable fishes and grass shrimp, and (3) serve as shelters for juvenile fishes and grass shrimp where predator efficiency is lower than in unvegetated areas.

ASSESSMENT OF THE POTENTIAL IMPACT OF INDUSTRIAL EFFLUENTS ON SUBMERGED AQUATIC VEGETATION

PRINCIPAL INVESTIGATOR(s):
Gerald E. Walsh

PROJECT NUMBER:
In-house

PERFORMING ORGANIZATION:
U.S. Environmental Protection Agency
Environmental Research Laboratory
Gulf Breeze, Florida 32561

EPA PROJECT OFFICER:
Thomas Nugent

BUDGET:
EPA Share $140,027

PROJECT PERIOD:
Begin - 8/10/78
End - 7/09/79

OBJECTIVES:

This project assesses the potential impact of industrial effluents and the combination of industrial effluents and herbicides on SAV. Since little is known about the toxicity of industrial wastes to marine organisms, the study is to determine for selected effluents, what fraction, organic or inorganic, contains the toxic factor.

EFFECTS OF RECREATIONAL BOATING ON TURBIDITY AND SEDIMENTATION RATES IN RELATIONSHIP TO SUBMERGED AQUATIC VEGETATION

PRINCIPAL INVESTIGATOR(s):
Jerome Williams
Herman Gucinski

PROJECT NUMBER:
EPA-78-D-X0426
Interagency Agreement

PERFORMING ORGANIZATION:
Department of Oceanography
U.S. Naval Academy
Annapolis, Maryland 21402

EPA PROJECT OFFICER:
William Cook

BUDGET:
EPA Share $28,613

PROJECT PERIOD:
Begin - 07/01/78
End - 5/31/80

OBJECTIVES:

This project has two primary objectives: (1) to determine if small-craft-induced water turbulence leads to measurable increases in suspended sediment and to determine the preferred measurement techniques, and (2) to determine the effects of recreational boating on suspended sediments.

EUTROPHICATION PROJECTS

DEFINITION OF CHESAPEAKE BAY PROBELMS OF EXCESSIVE ENRICHMENT OR EUTROPHICATION

PRINCIPAL INVESTIGATOR(s):

L. Eugene Cronin* Donald Heinle
Bruce Nielson Kenneth Webb
Jay Taft

PROJECT NUMBER:
R806189

PERFORMING ORGANIZATION:

Chesapeake Research Corporation
1419 Forest Drive
Suite 207
Annapolis, Maryland 21403

EPA PROJECT OFFICER:
Thomas Pheiffer

BUDGET:
EPA Share $360,411

PROJECT PERIOD:
Begin - 10/16/78
End - 10/15/80

OBJECTIVES:

The objectives of this program are: (1) to provide a summary of the fundamentals of nutrient enrichment as related to the Chesapeake Bay specifically and estuaries in general, (2) to describe nutrient enrichment of the Bay from a historical as well as contemporary perspective, (3) to apply and improve existing indicators and indices for nutrient enrichment for the Bay, (4) to explore and express the relationships between the nutrient enrichment and the consequences in the ecosystem as well as to Bay users, and (5) to define the related needs for future research and monitoring of conditions in the Chesapeake Bay.

AN ASSESSMENT OF NONPOINT SOURCE DISCHARGE, PEQUEA CREEK BASIN, LANCASTER COUNTY, PENNSYLVANIA

PRINCIPAL INVESTIGATOR(s):
Robert J. Bielo
Janice Ward

PROJECT NUMBER:
X-003146

PERFORMING ORGANIZATION:
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, Pennsylvania 17102

EPA PROJECT OFFICER:
Thomas Pheiffer

BUDGET:
EPA Share $310,014

PROJECT PERIOD:
Begin - 10/01/77
End - 03/31/81

OBJECTIVES:

The project includes detailed investigations of sediment, nutrient, and pesticide loadings in the surface waters of the Pequea Creek Basin. The project is one of four evaluating five watersheds in Maryland, Virginia and Pennsylvania. Emphasis will be on obtaining runoff rates from the various land use categories in this Basin, a high yielding agricultural area of the lower Susquehanna River.

EVALUATION OF WATER QUALITY MANAGEMENT TOOLS IN THE CHESTER RIVER BASIN

PRINCIPAL INVESTIGATOR(s):
Charles Bostater

PROJECT NUMBER:
R806343

PERFORMING ORGANIZATION:
Water Resources Administration
Maryland Department of Natural Resources
Tawes State Office Building
Annapolis, Maryland 21401

EPA PROJECT OFFICER:
Jim Smullen

BUDGET:
EPA Share $543,340

PROJECT PERIOD:
Begin - 10/16/78
End - 10/15/81

OBJECTIVES:

The project seeks to evaluate available tools for predicting eutrophication in estuarine systems. It is one of four projects, evaluating five watersheds in Maryland, Pennsylvania and Virginia; the Chester River Basin is the subject of this research.

INTENSIVE WATERSHED STUDY (PATUXENT RIVER BASIN)

PRINCIPAL INVESTIGATOR(s):
David Pushkar

PROJECT NUMBER:
R806306

PERFORMING ORGANIZATION:
Water Resources Administration
Maryland Department of Natural Resources
Tawes State Office Building
Annapolis, Maryland 21401

EPA PROJECT OFFICER:
Jim Smullen

BUDGET:
EPA Share $452,340

PROJECT PERIOD:
Begin - 10/16/78
End - 10/15/81

OBJECTIVES:

This study is one of four projects, evaluating five watersheds in Maryland, Pennsylvania and Virginia; the Patuxent River Basin is the subject of this research. The project seeks to evaluate available tools for predicting eutrophication by comparing costs and estimating the accuracy of the models.

EVALUATION OF MANAGEMENT TOOLS IN TWO CHESAPEAKE BAY WATERSHEDS IN VIRGINIA

PRINCIPAL INVESTIGATOR(s):
Robert V. Davis
Thomas Grizzard (VPI&SU)
Bruce Nielson (VIMS)

PROJECT NUMBER:
R806310

PERFORMING ORGANIZATION:
Virginia State Water Control Board
2111 North Hampton Street
Richmond, Virginia 23230

EPA PROJECT OFFICER:
Jim Smullen

BUDGET:
EPA Share $999,240

PROJECT PERIOD:
Begin - 10/01/78
End - 09/30/81

OBJECTIVES:

This study is one of four projects, evaluating five watersheds in Maryland, Pennsylvania and Virginia; the Occoquan and Ware River Basins in Virginia are the subject of this research. The project seeks to evaluate available tools for predicting eutrophication by comparing costs and estimating the accuracy of the models.

MODELING PHILOSOPHY AND APPROACH FOR CHESAPEAKE BAY PROGRAM WATERSHED STUDIES

PRINCIPAL INVESTIGATOR(s): Robert Ambrose	**PROJECT NUMBER:** In-house
PERFORMING ORGANIZATION: U.S. Environmental Protection Agency College Station Road Athens, Georgia 30601	**EPA PROJECT OFFICER:** Thomas Pheiffer
BUDGET: EPA Share $30,431	**PROJECT PERIOD:** Begin - 04/01/79 End - 10/01/81

OBJECTIVES:

Utilizing the field data collected in the watershed studies in Maryland, Pennsylvania and Virginia, this study seeks to (1) evaluate the relative effectiveness and basic accuracy of existing computer models as tools for the management of eutrophication in subestuaries of Chesapeake Bay and (2) provide information on the most cost-effective combination of models tested.

FALL LINE MONITORING OF THE POTOMAC, SUSQUEHANNA AND JAMES RIVERS

PRINCIPAL INVESTIGATOR(s): David Grason	**PROJECT NUMBER:** EPA-78-D-X0420 Interagency Agreement
PERFORMING ORGANIZATION: Geological Survey Water Resources Division 208 Carroll Building 8600 La Salle Road Towson, Maryland 21204	**EPA PROJECT OFFICER:** Thomas Pheiffer
BUDGET: EPA Share $663,000	**PROJECT PERIOD:** Begin - 09/01/78 End - 04/01/81

OBJECTIVES:

This project will characterize the inputs from major fresh water sources to the Chesapeake Bay system during the data collection period. The Susquehanna, Potomac and James Rivers will be monitored for chemical, physical and organic components in both qualitative and quantitative modes.

ASSESSMENT OF NUTRIENTS FROM VARIOUS SOURCES

PRINCIPAL INVESTIGATOR(s):
Gerard Laniak

PROJECT NUMBER:
R804917

PERFORMING ORGANIZATION:
School of Public Health
University of North Carolina
at Chapel Hill
Chapel Hill, NC 27514

EPA PROJECT OFFICER:
Norbert Jaworski

BUDGET:
EPA Share $15,000

PROJECT PERIOD:
Begin - 06/01/78
End - 12/31/79

OBJECTIVES:

This project seeks to determine a gross estimate of the relative magnitude of input and significance of different sources of nutrients on the water quality of the Bay. These sources include point, nonpoint and atmospheric sources of nutrients.

LAND USE AND POINT SOURCE NUTRIENT LOADING IN THE CHESAPEAKE BAY REGION

PRINCIPAL INVESTIGATOR(s):
Benjamin J. Mason

PROJECT NUMBER:
68-01-4144

PERFORMING ORGANIZATION:
GEOMET, Incorporated
15 Firstfield Road
Gaithersburg, MD 20760

EPA PROJECT OFFICER:
Thomas Pheiffer

BUDGET:
EPA Share $20,108

PROJECT PERIOD:
Begin - 07/26/79
End - 10/19/79

OBJECTIVES:

The objectives are to develop land use information to be used by the Chesapeake Bay Program in developing nutrient loading scenarios to (1) determine the Bay's water quality response to those loadings, (2) identify point source loadings of nutrients from manicipalities and industry for the basis for the years 1980 and 2000.

CHESAPEAKE BAY CIRCULATION MODEL

PRINCIPAL INVESTIGATOR(s): Robert Shubinski	**PROJECT NUMBER:** 68-01-5125
PERFORMING ORGANIZATION: Water Resources Engineers 8001 Forbes Place Springfield, Virginia 22151	**EPA PROJECT OFFICER:** John Klein
BUDGET: EPA Share $567,465	**PROJECT PERIOD:** Begin - 03/01/79 End - 07/01/81

OBJECTIVES:

The objectives of this project are (1) to produce an operational model of the water circulation of the Bay consisting of software and data which states the basic hydraulic and hydrodynamic phenomena and (2) to provide technology transfer to assure that the EPA staff fully trained to use and understand both model and support documentation.

WATER QUALITY LABORATORY FOR CHESAPEAKE BAY AND ITS SUBESTUARIES AT HAMPTON INSTITUTE

PRINCIPAL INVESTIGATOR(s): Larry T. Cheung	**PROJECT NUMBER:** R806229
PERFORMING ORGANIZATION: Department of Chemistry and Physics Hampton Institute Hampton, Virginia 23668	**EPA PROJECT OFFICER:** Charles Ploust
BUDGET: EPA Share $504,817	**PROJECT PERIOD:** Begin - 09/04/78 End - 12/31/80

OBJECTIVES:

This project evaluates the water quality (chemical and biological) of the Chesapeake Bay and selected subestuaries. Water quality information will be correlated with LANDSAT imagery. A helicopter-borne water quality sampling system will be evaluated.

CHESAPEAKE BAY NUTRIENT DYNAMICS

PRINCIPAL INVESTIGATOR(s):
Jay Taft

PROJECT NUMBER:
CR807637

PERFORMING ORGANIZATION:
The Johns Hopkins University
Charles and 34th Streets
Baltimore, Maryland 21218

EPA PROJECT OFFICER:
John Klein

BUDGET:
EPA Share $435,148

PROJECT PERIOD:
Begin - 05/01/80
End - 04/30/81

OBJECTIVES:
The objective of this project is to collect a comprehensive set of water quality data for the Chesapeake Bay. The data set will serve as a baseline from which to measure future changes and will be used to verify water quality models.

A WATER QUALITY MODELLING STUDY OF THE CHESAPEAKE BAY WATERSHEDS

PRINCIPAL INVESTIGATOR(s):
John P. Hartigan

PROJECT NUMBER:
CR807816

PERFORMING ORGANIZATION:
Northern Virginia Planning
District Commission
7309 Arlington Boulevard
Falls Church, Virginia 22042

EPA PROJECT OFFICER:
Jim Smullen

BUDGET:
EPA Share $66,008

PRODUCT PERIOD:
Begin - 07/15/80
End - 04/30/82

OBJECTIVES:
The objective of this project is to conduct water quality modelling using data generated from CBP watershed studies to develop nonpoint source loadings to Chesapeake Bay tributaries.

CHESAPEAKE BAY CIRCULATION AND WATER QUALITY MATHEMATICAL MODELS

PRINCIPAL INVESTIGATOR(s):
Frank Fong

PROJECT NUMBER:
CR808013

PERFORMING ORGANIZATION:
Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

EPA PROJECT OFFICER:
John Klein

BUDGET:
EPA Share $77,888

PRODUCT PERIOD:
Begin - 08/15/80
End - 08/14/82

OBJECTIVES:

The objectives of this effort is to conduct water quality modelling analyses of the Chesapeake Bay using loadings developed under project CR807816. The effort will identify potential problem areas in the Chesapeake Bay using year 200 projected inputs.

DELINEATION AND CHARACTERIZATION OF THE IRRADIANCE AVAILABLE FOR PHOTOSYNTHESIS WITH THE RESULTING PRIMARY PRODUCTIVITY AND RESPIRATION RATES IN THE PHOTIC-ZONE POTOMAC RIVER ESTUARY

PRINCIPAL INVESTIGATOR(s):
Michael Champ

PROJECT NUMBER:
X-003213

PERFORMING ORGANIZATION:
The American University
Washington, D.C. 20016

EPA PROJECT OFFICER:
Robert Bubeck

BUDGET:
EPA Share $9,937

PROJECT PERIOD:
Begin - 10/01/79
End - 9/30/80

OBJECTIVES:

The objective is to analyze data collected in the Potomac River Estuary for productivity and respiration rates.

DEVELOPMENT OF ASSESSMENT TOOL TO EVALUATE NUTRIENT TRANSPORT AND FATE IN THE LOWER SUSQUEHANNA RIVER

PRINCIPAL INVESTIGATOR(s):
Jerry Hollowell

PROJECT NUMBER:
X-003224

PERFORMING ORGANIZATION:
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, Pennsylvania 17102

EPA PROJECT OFFICER:
Tom Pheiffer

BUDGET:
EPA Share $26,721

PROJECT PERIOD:
Begin - 6/01/80
End - 6/30/80

OBJECTIVES:

The objective of this project is to calibrate and verify a model to predict nutrient transport and fate in the Lower Susquehanna River from Harrisburg, Pennsylvania to Conowingo Dam.

BROOKHAVEN SYMPOSIUM IN BIOLOGY NO. 31 - PRIMARY PRODUCTIVITY IN THE SEA

PRINCIPAL INVESTIGATOR(s):
Paul Falkowski

PROJECT NUMBER:

PERFORMING ORGANIZATION:
Brookhaven National Laboratory
Upton, New York 11973

EPA PROJECT OFFICER:
David Flemer

BUDGET:
EPA Share $8,610

PROJECT PERIOD
Begin - 06/02/80
End - 09/30/80

OBJECTIVES:

The objective of this project is to conduct a symposium addressing primary productivity in the sea.

PREPARATION OF A STRATEGY AND PLAN OF ACTION FOR DESIGNING THE RESEARCH OF MANAGEMENT RESOURCES FOR THE CHESAPEAKE BAY AREA

PRINCIPAL INVESTIGATOR(s):
John Keene

PROJECT NUMBER:
X-003149-01

PERFORMING ORGANIZATION:
Department of City and Regional Planning
University of Pennsylvania
3400 Walnut Street
Philadelphia, Pennsylvania 19104

EPA PROJECT OFFICER:
Gregory McGinty

BUDGET:

EPA Share	$14,336
Performing Organization Share....................	1,110
TOTAL......................	$15,446

PROJECT PERIOD:
Begin - 8/01/78
End - 6/30/79

OBJECTIVES:

The objective of the project is to assist in the development of a research program; the products of which will result in better coordination and more efficient management of the Bay's resources.

ENVIRONMENTAL MANAGEMENT IN THE CHESAPEAKE BAY

PRINCIPAL INVESTIGATOR(s):
David Harrison
William Nye

PROJECT NUMBER:
X-003200-01

PERFORMING ORGANIZATION:
Environmental Law Institute
1345 Connecticut Avenue, N.W.
Washington, D.C. 20036

EPA PROJECT OFFICER:
Gregory McGinty

BUDGET:
EPA Share $150,802

PROJECT PERIOD:
Begin - 06/25/79
End - 5/31/80

OBJECTIVES:
This study pursues three objectives: (1) to describe the present system of environmental management at all levels for the Chesapeake Bay, (2) to propose alternative management systems where warranted, and (3) to estimate the costs and benefits of such changes.

A HISTORY OF PUBLIC CONTROLS ON THE QUALITY OF CHESAPEAKE BAY WATERS

PRINCIPAL INVESTIGATOR(s):
Garrett Power

PROJECT NUMBER:
X-003226

PERFORMING ORGANIZATION:
Maryland Environmental Trust
501 St. Paul Place, Suite 1401
Baltimore, Maryland 21202

EPA PROJECT OFFICER:
Greg McGinty

BUDGET:
EPA Share $22,652

PROJECT PERIOD:
Begin - 06/01/80
End - 12/31/80

OBJECTIVES:
The objective of this project is to conduct a review of public regulatory control changes over time in the Chesapeake Bay region. This region will be correlated with historical information on water quality.

DATA MANAGEMENT PROJECT

AUTOMATED DATA PROCESSING SUPPORT FOR THE CHESAPEAKE BAY PROGRAM

PRINCIPAL INVESTIGATOR(s):
Russ Ryder

PROJECT NUMBER:
68-01-3840

PERFORMING ORGANIZATION:
Computer Sciences Corporation
Applied Technology Division
6565 Arlington Boulevard
Falls Church, Virginia 22046

EPA PROJECT OFFICER:
Lowell Bahner

BUDGET:
EPA Share $294,400

PROJECT PERIOD:
Begin - 04/01/79
End - 09/30/80

OBJECTIVES:

This contract provides the Bay Program with long-term and comprehensive capabilities in ADP software development, computer operations and data management. Categories of activity include management of financial data, project information, raw observational data, statistical analyses, graphic and tabular presentation and real-time computation.

STATISTICAL DESIGN AND ANALYSIS OF CHESAPEAKE BAY DATA

PRINCIPAL INVESTIGATOR(s):
Gerald Oglesby

PROJECT NUMBER:
CR807170

PERFORMING ORGANIZATION:
Institute of Statistical and
Mathematical Modeling
University of West Florida
Pensacola, Florida 32504

EPA PROJECT OFFICER:
Lowell Bahner

BUDGET:
EPA Share $41,113

PROJECT PERIOD:
Begin - 10/01/79
End - 09/30/80

OBJECTIVES:

The objective of this project is to conduct statistical analyses of data bases generated by the numerous Chesapeake Bay Program projects.

CHESAPEAKE BAY PROGRAM
(Office of Research and Development and Region III)

Chesapeake Bay Program Funding Summary

Fiscal Year 1979

October 22, 1979

PROGRAM AREA	AMOUNT
Toxics	$1,765,576
Eutrophication	991,436
Submerged Aquatic Vegetation	196,438
Environmental Quality Management Study	156,002
Data Management	669,381
Other	543,598
TOTAL	$4,322,431

Toxics Program Area

Project Title/Organization	Cost/Source
1. The Characterization of the Chesapeake Bay - A Systematic Analysis of Toxic Trace Elements (NBS EPA-79-D-X0717)	$150,000 (A&C)
2. Chesapeake Bay Earth Science Study - Interstital Water Chemistry (Md. G.S. - R805963 amendment)	$ 20,000 (A&C)
3. Chesapeake Bay Earth Science Study - Animal Sediment Relationships (Md. G.S. - R805964 amendment)	$ 4,075 (A&C)
4. Sediment and Pore Water Chemistry (College of William and Mary - R805966 amendment)	$ 1.674 (A&C)
5. Inventory and Toxicity Prioritization of Industrial Facilities Discharging into the Chesapeake Bay (GCA, Inc. 68-02-2607)	$ 83,355 (A&C)
6. Toxic Point Source Assessment of Industrial Discharges to the Chesapeake Bay Basin (Monsanto Research Corporation - 68-02-3161)	$862,950 (A&C)
7. Aqueous Effluent Concentrations for Biotesting (Northrop Services 68-02-2566)	$ 76,609 (A&C)
8. Aqueous Effluent Concentrations for Biotesting (Monsanto Research Corporation 68-02-1874)	$ 23,391 (A&C)
9. Aqueous Effluent Concentrations for Biotesting (Litton Bionetics 68-02-2681)	$ 50,000 (A&C)
10. Equipment (EPA/AFO)	$157.913 (A&C)
11. Evaluation of Bioassay Methodology for Application to Chesapeake Bay and Other Estuaries (CRC R807148)	$ 99,952 (R&D)
12. Biofractionation of Industrial Discharges (Batelle Memorial Inst. 68-02-2686)	$100,000 (R&D)
13. Monitoring, Particle-Associated Toxic Substances and Suspended Sediment in the Chesapeake Bay (JHU/CBI R805959-02)	83,846 (R&D)
14. Fate, Transport and Transformation of Toxics: Significance of Suspended Sediment and Fluid Mud (VIMS R806002-02)	$151,811 (R&D)
Total	1,765,576

Eutrophication

	Project Title/Organization	Cost/Source
1.	Assessment of Nutrients from Various Sources (Univ. of North Carolina R804917)	$ 10,000 (A&C)
2.	Evaluation of the Patuxent River (Maryland) Waste Load Allocations for Nutrients (Hydroscience 68-03-2568)	$ 25,000 (A&C)
3.	Assessment of Non-Point Source Discharges Pequea Creek Basin, Lancaster, Pennsylvania (SRBC X-003146-02)	$156,002 (A&C)
4.	Chesapeake Bay Circulation Model (WRE, Inc. 68-01-5125)	$249,949 (A&C)
5.	Definition of Chesapeake Bay Problems of Excessive Enrichment or Eutrophication (CRC R806189 amendment)	$ 22,054 (R&D)
6.	Evaluation of Water Quality Management Tools in the Chester River (Md. DNR R806343 amendment)	$115,000 (R&D)
7.	Modeling Philosphy and Approach for Chesapeake Bay Program Watershed Studies (ERL-Athens)	$ 25,431 (R&D)
8.	Fall-line Monitoring of the Potomac, Susquehanna and James (USGS EPA-78-D-X0420)	$363,000 (R&D)
Total		$991,436

Submerged Aquatic Vegetation

Project Title/Organization	Cost/Source
1. *Zostera marina*: Biology, Propagation and Effects of Herbicides (VIMS R805953 amendment)	$ 2,755 (A&C)
2. Functional Ecology of Submerged Aquatic Vegetation in the Lower Chesapeake Bay (VIMS R805974 amendment)	$ 19,332 (A&C)
3. Distribution and Abundance of Submerged Aquatic Vegetation in the Lower Chesapeake Bay - 1979 (VIMS X-003201-01)	$ 18,436 (A&C FY 1978 carryover)
4. Distribution of Submersed Aquatic Vegetation in Chesapeake Bay, Maryland - 1979 (CBF (CBF X-003202-01)	$ 56,430 (A&C FY 1978 carryover)
5. Biostratigraphy of the Chesapeake Bay and its Tributaries (JHU R806680)	$ 99,285 (R&D)
Total	$196,438

Environmental Quality Management Studies

Project/Organization	Cost/Source
1. Preparation of a Strategy and Plan of Action for Designing the Research of Management Resources for the Chesapeake Bay Area (University of Pennsylvania X-003149-01)	$ 5,200 (A&C)
2. Environmental Management in the Chesapeake Bay (ELI X-003200-01)	$150,802 (A&C)
Total	$156,002

Data Management

Project/Organization	Cost/Source
1. Keypunching	$ 840 (A&C)
2. Storet Account	$ 5,000 (A&C)
3. Automated Data Processing Support for the Chesapeake Bay Program	$167,000 (R&D)
4. Computer Feasibility Study (Calculon 68-01-4808)	$ 40,000 (R&D)
5. PDP 11/70 - Gulf Breeze (DEC 68-01-3801)	$133,561 (R&D)
6. PDP 11/70 - Gulf Breeze (DEC 68-01-3801)	$ 6,100 (R&D)
7. PDP 11/70 - CBP (DEC 68-01-3801)	$316,880 (R&D)
Total	$669,381

Other

Project Title/Organization	Cost/Source
1. Statistical Design and Analysis of Chesapeake Bay and Gulf Breeze Data (Univ. of West Florida R807170)	$ 19,063 (A&C) $ 3,350 (A&C FY 77 carryover) $ 18,700 (R&D)
2. Conduct and Reporting of 1979 Annual Review Workshop on the Chesapeake Bay Program (CRC X-003210-01)	$ 27,090 (A&C)
3. Chesapeake Bay Program Public Participation Program (CPCB, Inc. T900879 amendment)	$129,677 (A&C)
4. Quality Assurance (EMSL-LV)	$ 83,000 (R&D)
5. Remote Sensing (EMSL-LV/EPIC)	$ 40,000 (R&D)
6. Mathematical Models of Fates of Pollutants in Estuaries (Manhatten College R804563-03)	$ 69,713 (R&D)
7. Management Support (GEOMET 68-01-4144)	$153,005 (R&D)
Total	$543,598

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

OFFICE OF THE
ASSISTANT DIRECTOR
FOR ASTRONOMICAL,
ATMOSPHERIC, EARTH,
AND OCEAN SCIENCES

September 8, 1980

Honorable Charles McC. Mathias, Jr.
United States Senate
Washington, D. C. 20510

Dear Senator Mathias:

This responds to your letter of August 4, 1980 to Dr. Richard C. Atkinson requesting hearing record information on NSF support for research related to Chesapeake Bay. Table 1 (attached) summarizes NSF funding for FY-1979 and Table 2 (attached) NSF obligations for FY-1970 through FY-1979. My apologies for the delay in providing this material.

Sincerely,

Francis S. Johnson
Assistant Director

Table 1 NSF Funds for FY-1979 for Research Activities Related to Chesapeake Bay.

FY of Obligation	Institution	Amount ($ Thousands)
1979	Johns Hopkins Univ.	$491.0
	Hampton Inst.	100.0
	Chesapeake Research Consortium	149.7
	Conservation Foundation	30.1
1978	Johns Hopkins Univ.	26.0
	Virginia Institute of Marine Science	65.0
	College of William and Mary	12.5
	Univ. of Virginia	2.0
1977	Virginia Institute of Marine Science	2.0

Table 2 NSF Funds for Research Activities Related to Chesapeake Bay

FY of Obligation	Amount ($ Thousands)
1970	$ 469.1
1971	1,463.2
1972	2,103.0
1973	2,068.6
1974	492.5
1975	1,022.7
1976 + TQ	1,607.3
1977	346.4
1978	704.7
1979	844.1

Notes: Increased funding during FY 1971-73 reflects the initial NSF/RANN study of Chesapeake Bay, and increased funding during FY 1975-76, the NSF/RANN studies on physical alteration and pollutants in Chesapeake Bay.

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

OFFICE OF THE DIRECTOR

July 29, 1980

Honorable Charles McC. Mathias, Jr.
U. S. Senate
Washington, DC 20510

Dear Senator Mathias:

In response to your letter of July 10, 1980, I am pleased to present the views of the National Science Foundation on S. 1316, the "Chesapeake Bay Research Coordination Act of 1979."

We recommend against enactment of this legislation.

S. 1316 would establish within the Executive Branch an independent agency known as the Office for Chesapeake Bay Research Coordination, headed by a Director appointed by the Secretary of Commerce. Such an Office would coordinate all Federal research projects in the Chesapeake Bay region. It would also recommend to Federal, State, and local government agencies means for carrying out a comprehensive and balanced program for the management of the Chesapeake Bay System and its resources.

We believe that such a new Federal office is unnecessary. We believe that present mechanisms for research coordination are operating satisfactorily in facilitating research in the Bay area and in fostering contributions toward improving the understanding and management of the Bay. In view of the President's policy that there should not be a proliferation of Government agencies, we therefore recommend against the creation of such an office.

Among existing mechanisms for coordinating research in the Chesapeake Bay region, one stands out. The National Science Foundation developed a university-based system which serves as a clearinghouse for environmental information and informally coordinates research on the Bay. This system, the Chesapeake Research Consortium, Inc., was incorporated in 1972 in Maryland and is comprised of the University of Maryland, the Johns Hopkins

University, the Virginia Institute of Marine Science, and the Smithsonian Institution. In our view S. 1316 would create a new office within the Federal Government and assign it responsibilities similar or possibly even identical to those which are now being handled quite satisfactorily by the existing non-governmental Consortium.

Even if a new coordinating mechanism is needed, NSF believes S. 1316 is premature. EPA currently has undertaken a Chesapeake Bay program to assess and evaluate Federal research efforts on the Bay. If a new Federal research coordinating mechanism is found to be necessary, it should build on the results of EPA's Chesapeake Bay Program which are expected to be available in FY 1981. Also the Corps of Engineers' Chesapeake Bay study, conducted by the Baltimore District, will finish its model studies in FY 1982 and submit its final report in FY 1984. It will also present findings and make recommendations concerning management of certain aspects of the Bay. These results should also be incorporated into any proposed research coordination scheme for the Bay.

The Office of Management and Budget has advised us that there is no objection to the submission of this report from the viewpoint of the Administration's program.

Sincerely yours,

Donald N. Langenberg
Acting Director

United States
Department of
Agriculture

Soil
Conservation
Service

P.O. Box 2890
Washington, D.C.
20013

1980 AUG 20 AM 7:45

AUG 15 1980

Honorable Charles McC. Mathias, Jr.
United States Senate
Washington, D.C. 20510

Dear Senator Mathias:

This letter is in response to your inquiry of August 4, 1980, concerning the Chesapeake Bay Research Coordination Act and Soil Conservation Service (SCS) research expenditures related to the Chesapeake Bay.

The Soil Conservation Service did not fund research pertaining to the Bay in fiscal year 1979. Neither has our agency funded research related to the Bay in the other years since 1970.

We are reviewing S. 1316 and H.R. 4417 and will provide you with our comments when that review is completed.

Sincerely,

Acting For
NORMAN A. BERG
Chief

DEPARTMENT OF THE ARMY
WASHINGTON, D.C. 20310

8 SEP 1980

Honorable Charles McC. Mathias, Jr.

United States Senate

Dear Senator Mathias:

This is in response to your request for information on Department of the Army research activities on the Chesapeake Bay and the comments of this Department on S. 1316 and H.R. 4417, 96th Congress, bills "To provide for the coordination of federally supported and conducted research efforts regarding the Chesapeake Bay, and for other purposes."

The Department of the Navy previously reported to the Chairman of the House Committee on Merchant Marine and Fisheries on H.R. 4417. A copy of their report is inclosed. Under procedures prescribed by the Department of Defense, the Department of the Navy has been assigned responsibility for reporting on all similar legislation. That Department will report to you directly on S. 1316 after coordination of their views within the Department of Defense and after obtaining the necessary clearance by the Office of Management and Budget.

With respect to your request for specific data on funding by this Department for research on the Chesapeake Bay, we have prepared a table of information broken down by fiscal years and listing major contractors. A copy of this information is also attached. We wish to point out, however, that the Department of the Army does not fund any research by grants to third parties. All of our research is conducted by our own personnel or by contractors. Therefore, the attached table shows major contractors rather than grantees.

The Office of Management and Budget advises that, from the standpoint of the Administration's program, there is no objection to the presentation of this information for your consideration.

Sincerely,

John L. Hal

JOHN L. HALEY
Chief, Investigations Reports
and Legislative Division, OCLL

2 Incl
As stated

DEPARTMENT OF THE NAVY
OFFICE OF LEGISLATIVE AFFAIRS
WASHINGTON, D. C. 20350

IN REPLY REFER TO

28 NOV 1979

Dear Mr. Chairman:

Your request for comment on H.R. 4417, a bill "To provide for the coordination of federally supported and conducted research efforts regarding the Chesapeake Bay, and for other purposes," has been assigned to this Department by the Secretary of Defense for the preparation of a report presenting the views of the Department of Defense.

The purpose of the bill, which is to be entitled the "Chesapeake Bay Research Coordination Act of 1979," is to establish in the Department of Commerce an independent establishment to be known as the Office for Chesapeake Bay Research, Planning and Coordination. This office will review, evaluate and monitor all research projects impacting on the Chesapeake Bay area. The Office will be assisted by the Chesapeake Bay Research Board which is also established by H.R. 4417.

The Department of the Navy, on behalf of the Department of Defense, opposes this bill because, if enacted, it would impose burdensome and apparently unnecessary administrative constraints on any future research conducted by the Department of Defense in the Chesapeake Bay region. Approximately 50 special-purpose and multipurpose Federal interagency committees already exist to consider various aspects of marine science activities and oceanic affairs. One of those is the Committee on Atmosphere and Oceans of the Federal Coordinating Council for Science, Engineering, and Technology, which has a Subcommittee on Chesapeake Bay. The subcommittee has as its primary function the review and coordination of all Federal and State water resource related programs in Chesapeake Bay. Also, the Baltimore District office of the U.S. Army Corps of Engineers, in the conduct of the Corps' Chesapeake Bay Study, has formed a field-level organization to coordinate Bay related activities. The study organization is composed of an Advisory Group, a Steering Committee and five Task Groups. Each group and Committee has representatives of pertinent Federal and State agencies.

The proposed legislation would establish yet another organization in the Executive Branch, and a Board, at significant cost, to duplicate many of the functions already assigned to other agencies and governmental bodies.

Inclosure 1

Although it is recognized that the Chesapeake Bay can be considered to be an important "national resource", it is also observed that the proposed legislation would directly benefit only the states of Maryland and Virginia. Enactment of such federal legislation might establish a precedent which could lead to a proliferation of similar local-interest legislation pertaining to other geographic areas that could just as readily be considered to be "national resource" areas.

This report has been coordinated within the Department of Defense in accordance with the procedures prescribed by the Secretary of Defense.

The Office of Management and Budget advises that, from the standpoint of the Administration's program, there is no objection to the presentation of this report for the consideration of the Committee.

For the Secretary of the Navy.

Sincerely yours,

L. C. LAUTSCH
Captain, JAGC, U. S. Navy
Director, Legislation

The Honorable John M. Murphy, Jr.
Chairman, Committee on Merchant
Marine and Fisheries
House of Representatives
Washington, D.C. 20515

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

FUNDING FOR CHESAPEAKE BAY RESEARCH*
(In Thousands)

	FY 70	FY 71	FY 72	FY 73	FY 74	FY 75	FY 76	FY 7T	FY 77	FY 78	FY 79	FY 80
	420.1	1414.9	1832.6	3794.9	3978.6	4412.7	4239.6	825.5	2732.6	3566.6	4247.1	4309.5
These amounts include sums for research conducted by contractors as follows:												
Acres America									90.6	1068.6	813.0	1258.4
Virginia Institute for Marine Science						93.0	33.0	34.0				

*Does not include funding for authorized project studies or feasibility reports.

INCLOSURE 2

DEPARTMENT OF THE NAVY
OFFICE OF LEGISLATIVE AFFAIRS
WASHINGTON, D. C. 20350

IN REPLY REFER TO
LA-62:mrl
18 SEP 1980

1980 SEP 19 AM 10 34

Dear Senator Mathias:

This is in partial response to your letter of August 4, 1980, to the Secretary of the Army in which you requested information on Department of the Army research activities on the Chesapeake Bay, and the comments of that Department on S. 1316 and H.R. 4417, 96th Congress, bills "To provide for the coordination of federally supported and conducted research efforts regarding the Chesapeake Bay, and for other purposes."

On September 8, 1980, the Department of the Army responded to that portion of your letter requesting information on Army research activities on the Chesapeake Bay.

Under procedures prescribed by the Secretary of Defense, the Department of the Navy has been assigned the responsibility for preparation of the reports expressing the views of the Department of Defense on S. 1316 and H.R. 4417. In response to your request, we are enclosing copies of the reports on those bills which the Department of the Navy, on behalf of the Department of Defense, forwarded to the Chairman of the Committee on Governmental Affairs, U.S. Senate, on September 16, 1980.

Sincerely,

L. C. LAITSON
Captain, JAGC, U. S. Navy
Director, Legislation

The Honorable Charles McC. Mathias, Jr.
United States Senate
Washington, D. C. 20510

Enclosures

DEPARTMENT OF THE NAVY
OFFICE OF LEGISLATIVE AFFAIRS
WASHINGTON, D. C. 20350

IN REPLY REFER TO
LA-62:tah
16 SEP 1980

Dear Mr. Chairman:

Your request for comment on S. 1316, 96th Congress, a bill "To provide for the coordination of federally supported and conducted research efforts regarding the Chesapeake Bay, and for other purposes," has been assigned to this Department by the Secretary of Defense for the preparation of a report presenting the views of the Department of Defense.

The purpose of the bill, which is to be entitled the "Chesapeake Bay Research Coordination Act of 1979," is to establish in the Executive Branch an independent establishment to be known as the Office for Chesapeake Bay Research, Planning and Coordination. This office will review, evaluate and monitor all research projects impacting on the Chesapeake Bay area. The Office will be assisted by the Chesapeake Bay Research Board which is also established by S. 1316.

The Department of the Navy, on behalf of the Department of Defense, opposes this bill because, if enacted, it would impose burdensome and apparently unnecessary administrative constraints on any future research conducted by the Department of Defense in the Chesapeake Bay region. Approximately 50 special-purpose and multi-purpose Federal interagency committees already exist to consider various aspects of marine science activities and oceanic affairs. One of those is the Committee on Atmosphere and Oceans of the Federal Coordinating Council for Science, Engineering, and Technology, which has a Subcommittee on Chesapeake Bay. The subcommittee has as its primary function the review and coordination of all federal and state water resource related programs in Chesapeake Bay. Also, the Baltimore District office of the U.S. Army Corps of Engineers, in the conduct of the Corps' Chesapeake Bay Study, has formed a field-level organization to coordinate Bay related activities. The study organization is composed of an Advisory Group, a Steering Committee and five Task Groups. Each group and Committee has representatives of pertinent federal and state agencies.

The proposed legislation would establish yet another organization in the Executive Branch, and a Board, at significant cost, to duplicate many of the functions already assigned to other agencies and governmental bodies.

This report has been coordinated within the Department of Defense in accordance with the procedures prescribed by the Secretary of Defense.

The Office of Management and Budget advises that, from the standpoint of the Administration's program, there is no objection to the presentation of this report for the consideration of the Committee.

For the Secretary of the Navy.

Sincerely,

L. C. LAITSCH
Captain, JAGC, U. S. Navy
Director, Legislation

The Honorable Abraham Ribicoff
Chairman, Committee on Governmental Affairs
United States Senate
Washington, D.C. 20510

DEPARTMENT OF THE NAVY
OFFICE OF LEGISLATIVE AFFAIRS
WASHINGTON, D. C. 20350

IN REPLY REFER TO
LA-62:tah

16 SEP 1980

Dear Mr. Chairman:

Your request for comment on H.R. 4417, 96th Congress, a bill "To provide for the coordination of federally supported and conducted research efforts regarding the Chesapeake Bay, and for other purposes," as passed by the House of Representatives on May 19, 1980, has been assigned to this Department by the Secretary of Defense for the preparation of a report presenting the views of the Department of Defense.

The purpose of the bill, which is to be entitled the "Chesapeake Bay Research Coordination Act of 1980," is to establish in the Department of Commerce an independent establishment to be known as the Office for Chesapeake Bay Research, Planning and Coordination. This office will review, evaluate and monitor all research projects impacting on the Chesapeake Bay area. The Office will be assisted by the Chesapeake Bay Research Board which is also established by H.R. 4417.

The Department of the Navy, on behalf of the Department of Defense, opposes this bill because, if enacted, it would impose burdensome and apparently unnecessary administrative constraints on any future research conducted by the Department of Defense in the Chesapeake Bay region. Approximately 50 special-purpose and multi-purpose Federal interagency committees already exist to consider various aspects of marine science activities and oceanic affairs. One of those is the Committee on Atmosphere and Oceans of the Federal Coordinating Council for Science, Engineering, and Technology, which has a Subcommittee on Chesapeake Bay. The subcommittee has as its primary function the review and coordination of all federal and state water resource related programs in Chesapeake Bay. Also, the Baltimore District office of the U.S. Army Corps of Engineers, in the conduct of the Corps' Chesapeake Bay Study, has formed a field-level organization to coordinate Bay related activities. The study organization is composed of an Advisory Group, a Steering Committee and five Task Groups. Each group and Committee has representatives of pertinent federal and state agencies.

The proposed legislation would establish yet another organization in the Executive Branch, and a Board, at significant cost, to duplicate many of the functions already assigned to other agencies and governmental bodies.

This report has been coordinated within the Department of Defense in accordance with the procedures prescribed by the Secretary of Defense.

The Office of Management and Budget advises that, from the standpoint of the Administration's program, there is no objection to the presentation of this report for the consideration of the Committee.

For the Secretary of the Navy.

Sincerely,

L. C. LAUTSCH
Captain, JAGC, U. S. Navy
Director, Legislation

The Honorable Abraham Ribicoff
Chairman, Committee on Governmental Affairs
United States Senate
Washington, D.C. 20510

United States Department of the Interior
ADDRESS ONLY THE DIRECTOR, FISH AND WILDLIFE SERVICE
FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

SEP 2 4 1980

Honorable Charles McC. Mathias, Jr.
United States Senate
Washington, D.C. 20510

Dear Senator Mathias:

Thank you for your letter requesting information from the Fish and Wildlife Service respecting certain projects and legislation relating to the Chesapeake Bay.

Enclosed is a list of projects relating to the Chesapeake Bay funded by the Fish and Wildlife Service since fiscal year 1970, as you requested. I have also included separate listings of funding transferred to the States of Maryland and Virginia pursuant to the Federal Aid in Wildlife Restoration Act (Pittman-Robertson) Act, the Federal Aid in Sport Fish Restoration (Dingell-Johnson) Act, the Anadromous Fish Conservation Act and the Endangered Species Act of 1973.

You also asked for our views on S. 1316 and H.R. 4417, pending legislation to provide for coordination of Chesapeake Bay research efforts.

The Administration is opposed to this legislation. The primary purpose of these bills is to provide for an efficient and effective program of research to support the wise management of the Chesapeake Bay system for all those who use it. The major concern of those who use it relates to the maintenance of environmental quality in the face of burgeoning industrial, commercial and residential development. The Environmental Protection Agency presently has a program to address this problem. Their objectives are to: determine the causes of environmental pollution in the Bay; direct and coordinate research and abatement programs; and establish a clearinghouse for environmental sampling data. The Fish and Wildlife Service has worked closely with EPA in this program, for example, undertaking studies on the kepone contamination of James River.

Moreover, the National Science Foundation has an institutional mechanism for providing clearinghouse and research coordination for projects in the Chesapeake area. This mechanism, the Chesapeake Research Consortium, Inc. incorporated in 1972 in Maryland, is comprised of the University of Maryland, Johns Hopkins University, the Virginia Institute of Marine Science, and the

Smithsonian Institution. It would be duplicative to create a Federal office for Chesapeake Bay research coordination to perform the same functions of the existing consortium.

Please let me know should any additional information be necessary.

Sincerely,

Lynn A. Greenwalt

Director

Enclosure

U. S. Fish and Wildlife Service

Research Projects Affecting the Chesapeake Bay
Fiscal Years 1970-1979

Fiscal Year 1970

	FWS Funds
Effects of environmental contaminants on populations of birds of prey (Bald Eagle, Osprey, Peregrine Falcon, and Barn Owl).	$ 50,000
Canvasback wintering ecology and distribution.	20,000

Fiscal Year 1971

Effects of environmental contaminants on populations of birds of prey (Bald Eagle, Osprey, Peregrine Falcon, and Barn Owl).	50,000
Canvasback wintering ecology and distribution.	20,000

Fiscal Year 1972

Effects of environmental contaminants on populations of birds of prey (Bald Eagle, Osprey, Peregrine Falcon, and Barn Owl).	50,000
Effects of environmental contaminants on populations of waterfowl (primarily Canvasback).	30,000
Canvasback wintering ecology and distribution.	20,000

Fiscal Year 1973

Effects of environmental contaminants on populations of birds of prey (Bald Eagle, Osprey, Peregrine Falcon, and Barn Owl).	50,000
Effects of environmental contaminants on populations of waterfowl (primarily Canvasback).	30,000

Fiscal Year 1973 cont'd

	FWS Funds
Organochlorines and other pollutants in herons, other wading birds, and gulls.	$ 5,000
Canvasback wintering ecology and distribution.	50,000

Fiscal Year 1974

Effects of environmental contaminants on populations of birds of prey (Bald Eagle, Osprey, Peregrine Falcon, and Barn Owl).	50,000
Effects of environmental contaminants on populations of waterfowl (primarily Canvasback).	30,000
Canvasback wintering ecology and distribution.	50,000

Fiscal Year 1975

Effects of environmental contaminants on populations of birds of prey (Bald Eagle, Osprey, Peregrine Falcon, and Barn Owl).	50,000
Contaminant monitoring in tributaries of the Potomac.	10,000
Canvasback wintering ecology and distribution.	60,000

Fiscal Year 1976

Effects of environmental contaminants on populations of birds of prey (Bald Eagle, Osprey, Peregrine Falcon, and Barn Owl).	5,000
Effects of environmental contaminants on populations of waterfowl (primarily Canvasback).	10,000
Contaminant monitoring in tributaries of the Potomac.	10,000
Canvasback wintering ecology and distribution.	75,000

Fiscal Year 1977	FWS Funds
Effects of environmental contaminants on populations of birds of prey (Bald Eagle, Osprey, Peregrine Falcon, and Barn Owl).	$ 5,000
Contaminant monitoring in tributaries of the Potomac.	10,000
James River Kepone studies (EPA pass through funding $40,000).	10,000
Canvasback wintering ecology and distribution	80,000

Fiscal Year 1978

Effects of environmental contaminants on populations of birds of prey (Bald Eagle, Osprey, Peregrine Falcon, and Barn Owl).	10,000
Organochlorines and other pollutants in herons, other wading birds, and gulls.	10,000
Contaminant monitoring in tributaries of the Potomac.	10,000
James River Kepone studies (EPA pass through funding $37,000).	13,000
Canvasback wintering ecology and distribution.	85,000

Fiscal Year 1979

Effects of environmental contaminants on populations of birds of prey (Bald Eagle, Osprey, Peregrine Falcon, and Barn Owl).	10,000
Striped-bass contaminants.	40,000
Canvasback wintering ecology and distribution.	90,000

FEDERAL AID IN WILDLIFE RESTORATION ACT (PITTMAN ROBERTSON) FEDERAL FUNDING

Maryland	70	71	72	73	74	75	76	77	78	79	Total
Waterfowl banding	10,140	10,140	11,852	12,103	11,918	19,055	19,055	19,055	16,795	17,744	147,857
Susquehanna Flats vegetation survey	514	514	1,026	977	1,234	1,625	1,625	1,625	775	969	10,884
Trends in abundance distribution & composition of vegetation in Chesapeake Bay	632	632	1,350	3,200	2,778	5,136	5,136	5,136	4,335	5,183	33,518
Hunter Performance survey	1,337	1,337	3,562	1,818	2,870	3,499	3,499	3,499	1,430	1,430	24,281
Vegetative map survey	617	617		1,928	709	720	720	720			6,031
Muskrat house & den survey	864	864		939	1,096	1,390	1,390	1,390			7,933
Nonconsumptive waterfowl mortality survey	1,656	1,656	2,172	964	1,018	1,948	1,948	1,948	3,233	3,233	19,776
TOTAL	15,760	15,760	19,962	21,929	21,623	33,373	33,373	33,373	26,568	28,559	250,280

Federal Aid in Wildlife Restoration Federal Funding (Cont.)

Virginia	70	71	72	73	74	75	76	77	78	79	Total
Clapper Rail Habitat Inventory								4,875	4,875	4,875	14,625
Vegetative changes in Rappahannock River marshes									4,500		4,500
TOTAL								4,875	9,375	4,875	369,875

Funding is available for two years. Year listed is the year funding became available; may not correspond with Federal fiscal calendar.

FEDERAL AID IN FISH RESTORATION ACT(DINGELL-JOHNSON)FEDERAL FUNDING

To the State of Maryland	70	71	72	73	74	75	76	77	78	79	Total
To determine relative annual abundance & distribution of estuarine fishes					9,042	9,036	7,431	5,944	6,205	7,669	45,327
Conduct creel census on Chesapeake Bay							45,500				45,500
Study of small mouth bass below Conowingo Dam								5,110	1,208		6,318
Survey of largemouth bass in Chesapeake Bay								5,000			5,000
Study of effects of suspended sediment in Chesapeake Bay on fish eggs 7 larvae		71,250	76,791								148,041
Investigation of American shad in Upper Chesakeake Bay										57,975	57,975
TOTAL		71,250	76,791		9,042	9,036	52,931	16,054	7413	65,644	308,161

No D-J funding to Virginia during this time period.

Funding is available for two years. Year listed is the year funding became available; may not correspond directly with Federal fiscal calendar.

ANADROMOUS FISH CONSERVATION ACT FEDERAL FUNDING

Anadromous Fish Grants	70	71	72	73	74	75	76	77	78	79	Total
Maryland											
Pilot Marsh Study		37,000		21,000							58,090
TOTAL		37,000		21,000							58,090
Virginia											
Limiting factors on metabolism of striped bass	2,500										2,500
Estimation of parameters of the striped bass fishery of lower Chesapeake Bay	60,000										60,000
Feasibility of increasing striped bass by stocking	30,000	50,000	83,500	80,000	6,000						249,500
TOTAL	92,500	50,000	83,500	80,000	6,000						312,000

ENDANGERED SPECIES GRANT-IN-AID FEDERAL FUNDING

	70	71	72	73	74	75	76	77	78	79	Total
Maryland											
To restore self-sustaining populations of peregrine falcons							10,575	1,875	1,875	1,875	16,200
To restore self-sustaining populations of bald eagles							23,345	16,000	15,341	12,000	66,686
TOTAL							33,920	17,875	17,216	13,875	82,886
Virginia											
Peregrines							1,100	1,400	5,700	8,000	16,200
Bald Eagles							2,450	7,635	10,515	12,000	32,600
TOTAL							3,550	9,035	16,215	20,000	48,800

Funding is available for two years. Year listed is the year funding became available; may not correspond with Federal fiscal calendar.

HOUSE OF DELEGATES
ANNAPOLIS, MARYLAND 21404

CATHERINE I. RILEY
HARFORD COUNTY
SIXTH LEGISLATIVE DISTRICT
COMMITTEES:
ENVIRONMENTAL MATTERS
JOINT PROGRAM OPEN SPACE

OFFICE:
20 OFFICE STREET
BEL AIR, MARYLAND 21014
PHONE: 838-7010
HOME:
747 ROLAND AVENUE
BEL AIR, MARYLAND 21014

August 20, 1979

The Honorable Charles McC. Mathias, Jr.
Room 358, Russell Senate Office Building
Washington, D. C. 20510

Dear Senator Mathias:

Recently you sent me a copy of S. 1316 which proposes the consolidation of research efforts on the Chesapeake Bay.

I have reviewed the bill and discussed it with several persons interested in the Bay. As a result there are several comments I would like to make.

While I think it is important that research projects be coordinated, I believe it vital that there remain an element of scientific freedom. Thus page 6 lines 7-18 seem to concentrate too much power in the Research Board. I do not feel that any single group should have that amount of leverage. Therefore I would recommend the deletion of those lines.

I do question the placement of the Research Board in the Department of Commerce. The Department of Interior would seem more appropriate to me.

Finally on pages 9 and 10 where the composition of the Board is delineated, I believe the two states should have more input to balance somewhat the heavily weighted federal appointments. The states' positions might well be overwhelmed by those numbers. Additionally, members of the scientific community should be included since the Board's considerations will be primarily scientifically related. Thus I would recommend amending lines 12 and 14 on page 9 to read "4 members selected by the Governor, two of whom shall represent the academic scientific community of the State" or language accomplishing this intent. Line 16 would then be amended to reduce eleven to seven.

he Honorable Charles McC. Mathias, Jr.
August 20, 1979
Page Two

Page 10 lines 9-13 concern me, as again great power is being concentrated in this Board. This language should either be deleted or amended to ensure that the state's priorities are given strong consideration.

I believe the intent of the bill is good, as coordination is needed, as well as a central depository for research information. My suggestions would, I feel, eliminate the states' concerns about surrendering such power to this Board.

Since I am a member of the Joint Maryland - Virginia Committee on the Chesapeake Bay, I intend to bring the bill up for consideration at our next meeting on August 27. Should there be additional comments I will forward them to you.

Thank you for sending me the bill, and I hope my comments will be helpful to you.

Sincerely,

Catherine I. Riley

CIR:krb

Office of the Director
University of Maryland Sea Grant Program

H. J. Patterson Hall Room 1222
College Park, Maryland 20742

7 July 1980

The Honorable Charles McC. Mathias, Jr
Russell Building, Room 358
First and Constitution Avenues
Washington, D.C. 20510

Dear Senator Mathias:

I should like to provide some comment with regard to Senate Bill S1316, "Chesapeake Bay Research Coordination Act." I am seriously concerned about the bill because of one component of it, namely, the requirement to obtain prior approval or clearing of research programs carried out on the Chesapeake Bay. I feel that we in the Sea Grant Program have developed an exciting, active, productive, successful program that deals with real problems on the Chesapeake Bay. We are pulling together information and gathering new data to solve some of the genuine problems of the Bay, including declining water quality and oyster and shellfish harvests. If the Chesapeake Bay Research Coordination Act is passed, I fear that planning agencies will consider the requirement to clear programs through yet another governing body an additional hurdle that is unnecessary and time-consuming and, possibly, counterproductive in stifling creativity and novel research needed for dealing with problems of the Chesapeake Bay. If a project or program is proposed to a federal agency, or if the agency in turn wishes to have a project or program undertaken, they may very well divert their funds to other bodies of water, such as the Narragansett Bay or Pamlico Sound, since there will not be this added hindrance or burden of clearing and coordinating that would be demanded by the Chesapeake Bay Research Coordination Act. If the act could be modified to eliminate a requirement for clearance and/or approval by the Research Coordinating office, and if the Chesapeake Bay Research Coordination Act could read as simply a coordinating and communication, rather than a control, unit, then I think it may very well contribute in a positive way to improve interaction and communication amongst those of us working on the Bay and for whom the Bay is more than just a field study, but actually part of our lives and our heritage.

I hope very much that the act can be amended to eliminate this very disturbing component.

I shall be out of the country July 8 through August 20 and, therefore, most unfortunately will not be able to attend the hearing on the bill, but I do hope that my comments will be taken into account and that a change in the act can be undertaken.

Thank you for being a friend of the University of Maryland Sea Grant Program and, indeed, a friend of the Chesapeake Bay.

Yours sincerely,

Rita Colwell

R. R. Colwell
Director

RRC:gb
cc: Dr. David S. Sparks

June 20, 1979

Senator Charles Mathias:

I have read your new bill creating an Office for Chesapeake Bay Research and Planning that expands the ability and scope of your last years bill. I believe as I did last year that there is a great need for tabulating all the research done, or being done on the Chesapeake and its tributaries. It will be a vast job. To extract this information from the scientific world will not be easy. The seafood industry has complained for years that it was a very laborious process to get already known research information from scientists. Virginia Institute of Marine Science has micro-filmed much data and it is stored in their library. I've been trying to find out, for several months, without success, an evaluation of the Pocomoke Sound for shellfish that was done last fall. It took about eight months to get a paper by Dr. Thurlow Nelson concerning the James River oyster larvae set which he did in the 1930's. Dr. Nelsons work on the James River has been duplicated by a great number of marine biologists down through the years, the latest having been done by Dr. Hargis and Havens in the early 70's. All have confirmed Dr. Nelson's findings. I have pointed out these last experiments only to exemplify the type of tabulation needed. Librarian and statistician types are needed above all, practical commercial fishermen need to be represented on the Chesapeake Research team. If scientist and Federal employees are not given direction in obtaining and recording an orderly and easy to get at form, it will be totally without value.

The Citizens Steering Committee of the Environmental Protection Agencies Chesapeake Bay Program considered the Mathias bill last week. The consensus of the committee was that they approved the bill with variations but they were concerned with the timing. Both the "208" and the Chesapeake Bay Program are doing evaluations and tabulation of research. Also, there was some thinking that the Chesapeake Bay Program could be used as a vehicle for the research tabulation. It seemed, to the committee, that inasmuch as a new office has been created in Annopolis to administer the Chesapeake Bay Program this could be used as an already on-going program that could, with additional personal, as designated in the Bauman-Mathias bill, administered the Research Office.

The Chesapeake Bay Program is awarding about $4,000,000.00 for technical research along three problem areas-sub-acqueaous grasses, eutriphication, and toxics. Although there are many other problem areas time and money limits the technical team to these three.

We have a widely diversified Citizen Steering Committee advising the Environmental Protection Agency in the direction

pages tightly bound

and having oversight of these scientific research projects. I would like to point out that the Maryland and Virginia Joint Legislative Committee should be involved in the Office of Research activities as they represent the law-making bodies of Virginia and Maryland. The Maryland and Virginia Joint Legislative Committee and Citizens Steering Committee will be meeting in August to share knowledge of the Chesapeake Bay Program. We are hoping this will produce better informed legislators.

I am a bit afraid of the type of information that will come from the tabulation of research. The Marine Scientists, undoubtedly are awarded grants for studies that the political and news media world will hold up for ridicule. I think Senator Proxmire and his awards have noted some of this. The discussion of applied research vs basic research will become more and more a political target as our trillion dollar debt and project 13 necessarily gains more prominence in the minds of the American people. The scientific consortium of institutions around the Bay, headed by Dr. Eugene Cronin, has been devoting much thought to this. The last three or four years has seen a better effort at distributing research projects around the Bay with a minimum of duplication.

I approve the creation of an Office For Chesapeake Bay Research, Planning and Coordination if you expand (b) on line 2, page 3 of Section 2 Finding & Statement of Purpose, to read: "to provide for the rational and effective planning and coordination of Federally supported research, in light of past and present research, aimed at increasing fundamental knowledge in support of wise management of Chesapeake Bay system" My rationale is that there is no way to intelligently award research grants unless there is a previous knowledge of what has been done before. In the second paragraph of your invitation to comment you clearly set forth that research of the past and present would be tabulated before a "research plan" would be instigated. But I have not found the wording for this incorporated in the bill. On page six line three the word "completed" is used. Perhaps this could be clarified, page three line sixteen insert "past" before research projects.

Thank you for asking for comments-also for the many bills you have instigated on behalf of the fishery people around the Bay region.

Sincerely,

Cranston Morgan

Regional Planning Council
2225 North Charles Street Baltimore Maryland 21218 (301) 383-5838
Milton H. Miller, Chairman C. Bowie Rose Sr., Vice Chairman Walter J. Kowalczyk, Jr., Acting Executive Director

August 28, 1979

Hon. Charles McC. Mathias, Jr.
358 Russell Senate Office Building
Washington, D. C. 20510

Dear Mac:

On August 17, 1979 the Regional Planning Council met and discussed HR 4417, the Chesapeake Bay Research Coordination Act of 1979. While the council agrees that the goal to coordinate research is a laudable one, the primary concerns expressed revolve around how the activities and responsibilities of the Office for Chesapeake Bay Research, Planning, and Coordination will relate to those of organizations and agencies now active in bay affairs as well as of state and local governments along the Chesapeake Bay.

Because you are considering introduction of similar legislation in the Senate, the council wishes to bring to your attention the three basic concerns communicated to Congressman Bauman:

1. All research efforts (federal, state, local, and private) should be included in the information exchange activities of the office. Of additional concern is the lack of acknowledgment or mention of coordination with the existing Coastal Zone Management and EPA Chesapeake Bay programs.

2. The discretionary responsibilities should be removed from the bill, or the bill should be withdrawn until results of the work of the Joint Legislative Advisory Commission and the EPA Chesapeake Bay Environmental Management Study are known. In addition, the discretionary responsibilities of the office are of concern to the council and its member local governments as they may affect the management and public works projects of various agencies. Although Section 7a states that the office will not interfere with state and local powers, the effect on programs is uncertain.

3. Language should be added to the bill which will ensure greater involvement of local and state governments and the public in the activities of the office. With the exception of the annual conference, limited Chesapeake Bay Research Board membership, and some public notification, there is no requirement to keep state and local governments and the general public informed, and no opportunity is provided for general public reaction and input to the work of the office and board (particularly in the development of a Chesapeake Bay Research Plan).

We respectfully ask that you consider these comments in your proposed legislation. As you know, Regional Planning Council members share your concern for the Chesapeake Bay as being one of the most significant sources of the well-being of the Baltimore Region and the State, and we would appreciate continued information on the progress of your bill.

With best regards.

Sincerely yours,

Milton H. Miller
Chairman

[illegible]

United States Senate
COMMITTEE ON APPROPRIATIONS
WASHINGTON, D.C. 20510

September 6, 1979

Mr. Milton H. Miller
Chairman
Regional Planning Council
2225 N. Charles Street
Baltimore, Maryland 21218

Dear Mickey:

Thank you for your thoughtful letter concerning the Chesapeake Bay Research Coordination Act.

The points you raise concerning adequate participation by and recognition of the Coastal Zone Management Program, the EPA Bay Program, as well as State and local efforts are important not to be overlooked. As hearing testimony raises these points, they can be incorporated in the Committee report on the bill which serve as a legislative directive to the administering agency.

When hearings are scheduled on the Senate side, I will be happy to let you know of their time and place.

Let's keep in touch on this issue.

With best wishes,

Sincerely,

Charles McC. Mathias, Jr.
United States Senator

CM:mtm

1960 Prince George's Yacht Club

MEMBER - CHESAPEAKE BAY YACHT CLUBS ASSOCIATION
POTOMAC RIVER YACHT CLUBS ASSOCIATION

4820 Atwell Road
Shady Side, Maryland 20867

5 August, 1980

The Honorable Charles McC. Mathias, Jr.
358 Russell Building
Washington, D.C. 20515

Dear Senator Mathias;

It was indeed a priviledge to attend the recent hearing before the Senate Committee on Governmental Affairs, Sub-Committee on the District of Columbia on "The Chesapeake Bay Research Coordination Act of 1980" - S. 1316 and H.R. 4417.

I think the bills have considerable merit and am sure that many hours of thought and consideration, even years, have been invested in their creation. My only personal reservation is that I believe that the states in which the headwaters of the Chesapeake Bay originate should be represented on the proposed Commission as well as the tidewater states of Maryland and Virginia: i.e. West Virginia, Pennsylvania, Delaware, New Jersey, and New York. The testimony of Gerald D. Seinwell, Deputy Director of the United States Water Resources Council, supports my opinion.

Enclosed you will find a copy of the testimony which I presented before the Committee on Environment and Public Works of the United States Senate in opposition to S. 1631 "A Bill to provide additional funds for certain projects relating to fish restoration", sponsored by Senator Jennings Randolph. It's companion bill is H.R. 6074 which was sponsored by Congressman Breaux of Louisiana. I presented similar testimony concerning this bill on 12 March. In each instance I spoke on behalf of the National Boating Federation which represents 1,500,000 recreational boatmen and their families. I would appreciate your attention to these bills and to the plight of the approximately 75,000 recreational boatmen from Maryland in today's tight economy.

Respectfully yours,
Eve Finch
Past Commodore Eve Finch
PRINCE GEORGE'S YACHT CLUB

Rear Commodore
CHESAPEAKE BAY YACHT CLUBS ASSOCIATION

Legislative Liaison
National Boating Federaion
Director
POTOMAC RIVER YACHT CLUB ASSOCIATION

Potomac River Yacht Club Association

AUG [illegible] 3:59

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1980

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Statement of

EVE FINCH

POTOMAC RIVER YACHT CLUB ASSOCIATION
4820 Atwell Road
Shady Side, Maryland 20867

to the

Subcommittee on Governmental Efficiency and the District of Columbia

of the

Committee on Governmental Affairs of the United States Senate

on

S. 1316 and H.R. 4417

"The Chesapeake Bay Research Coordination Act of 1980"

August 8, 1980

Statement of Eve Finch, Legislative Liaison Officer, POTOMAC RIVER YACHT CLUB ASSOCIATION, 4820 Atwell Road, Shady Side, Maryland 20867, to the Subcommittee on Governmental Efficiency and the District of Columbia of the Committee on Governmental Affairs of the United States Senate regarding companion Bills S. 1316 and H.R. 4417, "The Chesapeake Bay Research Coordination Act of 1980".

Honorable Chairman Mathias and Distinguished Committee Members:

I am Eve Finch, Past Commodore of Prince George's Yacht Club, located in the State of Maryland. I also serve as Legislative Liaison Officer for the Potomac River Yacht Club Association and as the National Boating Federation Director for that Association.

The Potomac River Yacht Club Association, which is a non-profit, volunteer organization, is presently comprised of twelve (12) yacht clubs with a combined membership of approximately 5,000 recreational boatmen and their families situant in the States of Maryland, Virginia, and the District of Columbia, on the shores and tributaries of our beautifully scenic Potomac River, itself a tributary of the incomparable Chesapeake Bay. They are:

Aquia Harbour Yacht Club - Virginia
Capital Yacht Club - the District of Columbia
Colonial Yacht Club - Virginia
Fort Washington Yacht Club - Maryland
Landmark Yacht Club - Virginia
Mount Vernon Yacht Club - Virginia
National Potomac Yacht Club - the District of Columbia
Port Tobacco Yacht Club - Maryland
Prince George's Yacht Club - Maryland
Sailing Club of Washington - the District of Columbia
Tantallon Yacht Club - Virginia
Wicomico Yacht Club of St. Mary's County - Maryland

It is the considered, collective opinion of the Executive Board of the Potomac River Yacht Club Association that the "Chesapeake Bay Research Coordination Act of 1980" (S. 1316 and H.R. 4417) does indeed have a most commendable reason for existance and we do appreciate the many hours, even years, of thought and consideration that have been invested in its' creation.

However, we do have some reservations concerning these Bills, the primary one being that no provision for representation from all of the tidewater states is made nor for all of the states in which the headwaters of the Chesapeake Bay originate. Specifically, we believe the composition of the Chesapeake Bay Research Board should include representation from the following:

Delaware
District of Columbia
Maryland
New Jersey
New York
Pennsylvania
Virginia
West Virginia

We think that it would be extremely difficult to establish the validity of data collected in the restricted area of the tidewaters surrounding Maryland and Virginia without taking into consideration the unknown and unpredictable quality of the neighboring tidewaters and of the headwaters which would co-mingle, at some point, with the waters undergoing research.

Therefore, it seems to this body, that representation from those states in which are found tidewaters or headwaters of the Chesapeake Bay would indeed be not only welcome, but absolutely necessary.

We respectfully request that very serious consideration be given to the previously stated reservation and recommendation.

Respectfully yours,

Eve Finch

Eve Finch
Legislative Liaison Officer
POTOMAC RIVER YACHT CLUB ASSOCIATION

Director
NATIONAL BOATING FEDERATION

Past Commodore
PRINCE GEORGE'S YACHT CLUB

4820 Atwell Road
Shady Side, Maryland 20867

(301) 261-5890

SIERRA CLUB

APPALACHIAN REGIONAL CONSERVATION COMMITTEE

CORRESPONDENCE
Address reply to:
James W. Clarke
402 Burgundy Dr.
Rockville, MD. 20853

STATEMENT BY JAMES W. CLARKE, REGIONAL VICE PRESIDENT, SIERRA CLUB ON S.1316 AND H.R. 4417 BEFORE THE SENATE GOVERNMENT AFFAIRS COMMITTEE ON JULY 31, 1980.

My name is James W. Clarke and I live in Rockville, Md. I am speaking as a representive of the Sierra Club of which I am the a regional vice president for the states of Pennsylvina to Sout Carolina including Tennessee.

The Sierra Club has long been concerned about Chesapeake Bay, one of the nation's great natural resources. We know that this great natural resource is in trouble. Rockfish are now hard to find. Oyster harvests have declined. Waters once abundent with crabs now have less crabs. The adquate grasses that are the basis of the life support system for many of the organisms of the are disappearing. Why? That is what we need to find out.

In 1973 the National Science Foundation recommended that an overall cordinated research plan for the Bay be established. We feel that this type of effort is very much needed. Over 60 fereral state and local agencies conduct research on the Bay. There are 18 data bases of Bay information. Because there is a lack of common storage, retravel and analysis of the data on Bay research there is duplication of research. Data bases, unless maintained and updated, become outdated. Valuable research information is lost and this research must be repeated. Dollars for research are scarce as it is in these times of tight budgets and we cannot afford to waste any of our research money.

Federal agencies generally have a good record of internal communications but the external record of federal agencies leaves much to be desired. We feel that if the Office of Chesapeake Bay Research is established in the Department of Commerce, as recommended in H.R. 4417 that the director would not have the necessary means to carry out the cordination reguired by the act. We feel that the best way to ensure the director the nesessary clout is to have the director be a Presidential appointee as recommended in S. 1316.

We have two changes that we would like to incorpated into S. 1316. On page 5 of S. 1316 in section (2) (A) the Sierra Club feels that in addition to the Secretaries of Commerce, Interior, Army and the Administratior of EPA that, because of their long involvment in the Bay, ~~that~~ the Secretary of the Smithsonian Instution should be added as one the President should consult with.

The second change we would like to see is on page 9, Sec. 5 (b)(1) (C) where we again feel that in the ~~situation~~ selection of the Chesapeake Bay Research Board that the Secretary of the Smithsonian should be added as one who is consulted in the ~~situation~~ selection of the 11 members of the Board.

We would like to take this opportunity to thank you Senator Mathais for good efforts on behalf of Chesapeake.

Thank you for this opportunity to present our views.

UNIVERSITY OF MARYLAND
CENTER FOR ENVIRONMENTAL AND
ESTUARINE STUDIES

CHESAPEAKE BIOLOGICAL LABORATORY
BOX 38 - SOLOMONS, MARYLAND 20688
301 - 326-4281

AM 11: 18

August 4, 1980

Honorable Thomas F. Eagleton, Chairman
Subcommittee on Governmental Efficiency and
the District of Columbia
Committee on Governmental Affairs
United States Sentate
Washington, D. C. 20510

Dear Senator Eagleton:

I am writing in regard to S. 1316, and H.R. 4417 which has reached the Senate. These bills deal with the establishment of an Office for Chesapeake Bay Research Coordination. I urge that S. 1316 not be passed, because:

1. It would insert an expensive and unnecessary level of administration in the research process. Scientists doing research on the Chesapeake have had recent opportunity to observe a similar type of administration in the EPA Chesapeake Bay Program. Approximately 40% of the funds in that program are going to administrative costs.

2. An appropriate level of cooperation already exists, and has gone on for many years, among the scientists and institutions conducting research on the Chesapeake. A portion of this cooperation is evidenced by the formation of the Chesapeake Research consortium which includes the Smithsonian Institution, the Johns Hopkins University, the Virginia Institute of Marine Science, and the University of Maryland. This consortium fosters coordination on a large number of ongoing research projects. In addition, there is a large number of cooperative research and educational projects which do not involve the Chesapeake Research Consortium - my own Laboratory is presently involved in six such projects which include scientists from nearby institutions and institutions as far away as Pennsylvania, Ohio, and Massachusetts. Scientists working on the Chesapeake meet twice a year to exchange results and ideas via the Atlantic Estuarine Research Society. At a less

formal level, there is a yearly exchange at the "Chesapeake Research and Chowder and Marching Society." Scientists know other scientists and cooperate with them, they know the capabilities present at other institutions, and they meet regularly to exchange ideas and results. Further formal coordination is not necessary, particularly at an estimated cost of $500,000.00.

3. The proposed Office would stifle scientific creativity. It would participate in setting priorities which would ensure that funds went to projects in those priorities and not to potentially innovative proposals which might make major contributions. Such an Office would "standardize" research according to criteria determined by people relatively far removed from the Bay itself.

I submit that at least 90% of the working scientists share my view of the proposed legislation. Our senior researchers now spend as much as 40% of their time seeking support rather than conducting research. In my judgement, the proposed Office would create another layer of bureaucracy between the scientists and support funds. I am aware that Drs. L. E. Cronin and W. J. Hargis, Jr. testified recently in favor of the bill as representatives of the Chesapeake Research Consortium. Their testimony may represent the position of the Consortium as an institution. It certainly does not represent the position of a majority of the working scientists at the member institutions.

I urge that S. 1316 not be passed.

Sincerely,

J. J. Cooney

Joseph J. Cooney
Professor, Head of Laboratory

Copy to:
Senator Charles McC. Mathias, Jr.
Members, Chesapeake Research Consortium Board of Directors

mjh

Citizens Program for the Chesapeake Bay, Inc.

1980 OFFICERS AND EXECUTIVE COMMITTEE

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5 East Queens Way
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(804) 723-0774

1980 AUG 11 AM 9 23

August 7, 1980

Honorable Thomas B. Eagleton, Chairman
Sub-committee on Governmental Efficiency
and the District of Columbia
United States Senate
Washington, DC 20510

Dear Chairman Eagleton:

This letter constitutes the views of the Citizen's program for the Chesapeake Bay concerning legislation (S. 1316 and H. R. 4417) to establish an office for the purpose of coordinating federal research on the Chesapeake Bay. The Citizen's Program for the Chesapeake Bay is an organization that provides a forum for discussion of problems of the bay in an effort to achieve reasonable and effective solutions.

We are pleased to advise that the CPCB supports the intent of the proposed legislation. There is no question that as the uses and users of the Bay continue to multiply through the end of this century, it will be essential to know a great deal more about the Bay than we presently do. In fact, of course, it is essential that the research efforts of all agencies and institutions be kept in tune, both as to character and amount, with the growing need for knowledge of the Bay. Coordination of the federal efforts should help to identify the areas of important research and provide a basis on which each of the federal agencies can establish its priorities.

Honorable Thomas B. Eagleton, Chairman
Page 2
August 7, 1980

We would reiterate a concern expressed by others, that in searching for efficiency and the elimination of duplication, the coordination mechanism not be viewed as a means of limiting or controlling research. We strongly believe that the agency research managers may be relied upon to reflect the work of others in directing their own activities, and thus eliminate needless expense. Thus the most important role of the "mechanism" that would be established would be to promote the greatest interchange of information among the various agencies. As long as the "Chesapeake Bay Research Plan," as called for in section 5, is used as a vehicle for progressive research management, rather than direct control or coercion of agency programs, it may be expected to make a constructive contribution to the long range welfare of the Bay.

We are specifically concerned that there is no requirement in either bill that the agencies that have management responsibilities for various aspects of Bay usage are not necessarily to be members of the Chesapeake Bay Research Board. The language merely specifies that seven members be selected by the Secretary of Commerce "in consultation with" the heads of the federal agencies with authorities for Bay activities. It is our experience that there needs to be a close relationship between the research programs and the management authorities if the objectives of the research are to be related effectively to management needs.

In this same context, the presence on the Board of representatives of state managing agencies should also be mandated. Unless this is done, there will likely be a widening of the gap that currently separates much of the state supported research and management from that of the federal agencies.

In the same vein, we are concerned that there is no specific requirement that there be any representation on the Board of Bay "users," that is, the watermen, recreational fishermen, recreational boaters, shipping, interests, et al. We doubt that the present language in section 5 is adequate to assure appropriate representation from these groups. There should be strong citizen representation on the Board.

We appreciate the opportunity to provide these comments for the record of your committee on this important legislation.

Sincerely yours,

John S. Gottschalk, Acting Presendent
CPCB

cc: Senator Charles McC. Matthis, Jr.
Senator Paul S. Sarbanes
Senator John W. Warner
Senator Harry F. Byrd, Jr.

SMITHSONIAN INSTITUTION
Washington, D.C. 20560
U.S.A.

September 26, 1980

Honorable Charles McC. Mathias
United States Senate
Washington, D. C. 20510

Dear Senator Mathias:

Thank you very much for your request for information about our activities related to Chesapeake Bay research.

As you know, the Smithsonian Institution operates the Chesapeake Bay Center for Environmental Studies near Annapolis, a 2,600 acre natural area that serves as a base for an environmental research program which consists of three principal elements: upland ecology, watershed studies, and estuarine ecology.

The first element has as its goal the understanding of the evolutionary ecology of plant and animal populations as they are affected by existing and past land use practices.

The watershed studies seek to determine the relationship between land use and run-off in an estuarine watershed system of the eastern coastal plain.

The objectives of the third program element - estuarine ecology - are to describe the ecological pathways and processes affecting important estuarine communities; to assess the role of various communities within an estuary in supporting fish and shellfish species; and to characterize coastal areas relative to environmental change. One of the significant findings of the Center's estuarine research program is that the concentration of recreational boats in the creeks and inlets of Chesapeake Bay may produce heavy bacterial contamination of these waters which, in some cases, is sufficient to prevent the harvesting of nearby oysters.

The enclosed table provides information on funding for the Chesapeake Bay Center for Environmental Studies for fiscal years 1970 through 1980. Research grants to outside organizations were not made; however, as the table demonstrates, grant funds from sources outside of the Smithsonian were received for research activities at the Center.

The Smithsonian Institution is a member of the Chesapeake Research Consortium and concurs in the views of that organization on the pending legislation.

Best —

Sincerely yours,

S. Dillon Ripley
Secretary

Enclosure

CHESAPEAKE BAY CENTER FOR ENVIRONMENTAL STUDIES

Levels of Funding
FY 1970-FY 1980
($ in 000's)

	Smithsonian-supported Operations and Research		Outside Research	
Fiscal Year	Federal Appropriation	Non-Federal Funds	Federal Grants[1] & Contracts	Non-Federal[2] Grants & Contracts
1970	51	42	---	---
1971	68	32	33	52
1972	160	19	86	3
1973	236	20	227	55
1974	350	11	278	40
1975	434	22	180	31
1976	530	25	260	30
1977	586	41	383	35
1978	592	51	415	53
1979	663	62	---	130
1980	736	76	325	150

---

[1] Primary Sources are the National Science Foundation and the Environmental Protection Agency.

[2] Primary Sources are the State of Maryland and private foundations.

SMITHSONIAN SCIENCE INFORMATION EXCHANGE, INC.
634-3988
Room 300 • 1730 M Street, N.W. • Washington, D.C., U.S.A. 20036 • Tel. (202)381-4211 • Telex 89495
——the national source for information on research in progress
——David F. Hersey, Ph. D., President

September 11, 1980

Honorable Charles McC. Mathias, Jr.
United States Senate
Room 358 Russell Senate Office Building
Washington, D.C. 20510

Dear Senator Mathias:

In response to the request by Ms. Mary Hoyer of your staff, I would like to bring to your attention information about the Smithsonian Science Information Exchange and its activities since I believe it could play an important role in many of the activities of the Office for Chesapeake Bay Research, Planning and Coordination referenced in the proposed bill (S. 1316).

For the past 30 years the Exchange has served as the Government's data base system of ongoing research information (i.e., research in progress or recently terminated). As such it receives information from virtually all Federal agencies which support basic and applied research in all areas of science and technology. Attachment 1 describes this role in greater detail.

Although SSIE's major function is to provide services to R&D managers, planners and policy makers, it also serves the individual scientists as well. It should be noted that SSIE's functions are unique in that it does not overlap with other S&T information systems such as the National Technical Information Service in the Department of Commerce (which handles published technical reports) or other bibliographic information systems such as the National Agricultural Library or the National Library of Medicine. Rather it precedes them as a source of information on research projects prior to the time when they might result in the publication of such literature and thus complements them.

Several years ago in 1969 and 1973 the Exchange, which had been designated in 1968 by the National Council on Marine Resources and Engineering Development as the national information center (see Attachment 2) to collect and disseminate such information, prepared inventories of such research for publication. As you will see from the index pages of the 1973 Directory (Attachment 3) there were many projects at that time which dealt with the bay area. The Exchange currently maintains in its file some 126 projects that relate to such research and can retrieve them in relatively short order. It also maintains the ability to tabulate them according to the source (organization) which provides their support or that perform the

C 42/2

CHESAPEAKE BAY RESEARCH COORDINATION ACT

HEARING

BEFORE THE

SUBCOMMITTEE ON GOVERNMENTAL EFFICIENCY

AND THE

DISTRICT OF COLUMBIA

OF THE

COMMITTEE ON GOVERNMENTAL AFFAIRS UNITED STATES SENATE

NINETY-SIXTH CONGRESS

SECOND SESSION

ON

S. 1316 and H.R. 4417

JULY 31, 1980

Printed for the use of the Committee on Governmental Affairs

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CHESAPEAKE BAY RESEARCH COORDINATION ACT

THURSDAY, JULY 31, 1980

U.S. Senate,
Subcommittee on Governmental Efficiency
and the District of Columbia,
Committee on Governmental Affairs,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:15 a.m., in room 6226, Dirksen Senate Office Building, Hon. Charles McC. Mathias (acting chairman of the subcommittee) presiding.

Staff present: Marion Morris, legislative assistant; Monica Healy, legislative assistant; Mary Wall, legislative aide, and Mary Hoyer, legislative fellow.

OPENING STATEMENT OF SENATOR MATHIAS

Senator Mathias [acting chairman]. The subcommittee will be in order.

We are here today to hear witnesses on two companion bills before this subcommittee. S. 1316 and H.R. 4417 are both entitled, the Chesapeake Bay Research Coordination Act.

The House bill was introduced by Representative Bauman on June 11, 1979 and passed the House on May 17, 1980 The Senate bill was introduced by myself on June 12, 1979.

Both bills seek to address a perceived lack of coordination of federally funded research affecting Chesapeake Bay.

I have long been concerned about the health of the Chesapeake Bay—both ecologic health as well as economic health. In fact, earlier this week I was able to visit several places and institutions on the bay which are involved in the effort to identify the dynamics at work on this great ecosystem—the Nation's largest estuary.

And we are learning many things about the dynamics at work in and around the bay which are helping us to understand the decline in rockfish, oyster, shad, and the ups and downs of the blue crab harvest. We may be even nearer to understanding the virtual demise of bay delicacies which once abounded—sturgeon and the Maryland terrapin.

But in order to understand why these species of shellfish and finfish are declining, we must look to the root cause—the decline in water quality of the bay. The bay has increasing volumes of nutrients causing algae "blooms" which block out needed sunlight essential to the survival of bay grasses, which in turn, are a mainstay of the food chain for bay aquatic life as well as shore birds.

We are making progress in understanding these phenomenon, thanks in part to the EPA Chesapeake Bay program, a major research effort which I have promoted and supported since 1975. The research from that effort is now beginning to yield important results which will be of use to bay users from watermen to public officials at the local, county, State, and Federal levels—to private business which is involved in commerce on the bay or in doing business that impacts on the bay.

So I am encouraged by the pace of bay research and committed to seeing it continue.

At the same time we must assure that limited Federal funds be used prudently to address those bay problem areas which are of the highest priority. And we must assure that research builds on past research and contributes to a cohesive body of knowledge.

We must be sure that those engaged in research related to the bay are aware of other past and ongoing research so that they might build from that base.

The bills before the subcommittee are aimed at accomplishing that purpose.

Our first witness is my Maryland colleague from the House, sponsor of the House version of this legislation, and Representative of the First District, Maryland's Eastern Shore, Hon. Robert E. Bauman.

In the 2 days I spent on and around the bay earlier this week, I enjoyed, as I always do, the opportunity to see what is happening there. There is considerable progress, but the problems are growing nearly as fast as the progress we are making.

Also, you cannot escape a certain paradox in matters such as the fact that today it is probably food more than poison that is creating the problem. The nutrients going into the bay are having a more detrimental effect than the toxic substances.

Also, despite the enormous effort that has been put into providing information about the bay, there are still large gaps in information between individuals and groups who were vitally interested in that area.

These are all subjects that we are here to discuss today. So without further ado I will ask Congressman Bauman to give us his statement.

TESTIMONY OF HON. ROBERT E. BAUMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MARYLAND

Representative BAUMAN. Thank you, Mr. Chairman.

Thank you very much for scheduling this hearing before your subcommittee. I assume that because of the fact that the acting chairman of the subcommittee has cosponsored similar legislation, we may look for some possibility of favorable action by the subcommittee of some sort of legislation.

I would ask unanimous consent that my statement be inserted in the record.

Senator MATHIAS. Your full statement will appear in the record as if read at the conclusion of your testimony.

Representative BAUMAN. This legislation grows out of activities on my part and other Members of the Congress, stretching over at least 5 years or more. I want to express my appreciation to you for sponsoring legislation in the Senate paralleling the bill that was introduced in the House by myself, Mrs. Holt, and Ms. Mikulski from the Maryland Delegation in the House.

I trust the fact that you are sponsoring this legislation will convince our colleagues to pass this legislation. This legislation also has the endorsement of Senator Warner who also, I think, has a very intimate interest in the progress of the bay and the problems that surround it.

In addition, I want to say a very heartfelt "thank you" to the States of Maryland and Virginia and to the Secretary of Natural Resources, Jim Coulter, and Secretary of Commerce and Natural Resources in Virginia, Maurice Rowe.

In fact, we have this morning with us Lee Zeni and Buster Phipps, both known to the Senator. Mr. Phipps will be making remarks this morning in support of the bill.

Without the cooperation of the Department of Natural Resources of Maryland and officials from the State, we could not have possibly reached the progress that we have on this legislation.

I will outline just briefly the purpose of the legislation.

Basically it is an attempt on a Federal level to improve the coordination of research regarding the Chesapeake Bay. It also tries to bring in much broader participation in the development of what those research priorities ought to be.

The bill has a number of ways of doing this. It creates a clearinghouse to collect, store, and disseminate research information. It would establish an Office of Coordination in the Department of Commerce which would act along with the research board to draw up a master plan of research.

The Chesapeake Bay Research Board would be composed of 15 members, 4 each appointed by the Governors of Maryland and Virginia, and 7 by the Secretary of Commerce.

I would hope that would bring in a new element of State participation in Federal decisionmaking on research, or at least some guide that the States have complained they have lacked in the past.

Being somewhat fiscally conservative by reputation and fact, I point out that the bill authorizes about $500,000 for 3 fiscal years, but it contains a sunset provision that would terminate the entire authority at the end of 3 years if it looks as though it is not working. That was something suggested in the House hearings last year so we would have a chance to test its effectiveness.

The Senator has just referred correctly to the many problems that he encountered in the last 2 days in his tour of the Chesapeake Bay earlier this week. I would only note for his edification that this morning's Easton Star Democrat's headline said: "Mathias Says Many Problems Plague Bay."

Then there was an article by Jack Bowie, who is with us this morning, which is a catalog of just some of the facts that you gleaned in your trip earlier this week. They are laid there for all of us to see.

I will leave that with you along with the other 3 days of publicity that the Senator received on his trip to the bay. All of them contain graphic evidence of the problems that do exist.

When we started cataloging all the Federal, State, and local agencies that are now conducting research, we came up with a number in the vicinity of 60 separate agencies.

The thing that bothers me most is that while much of this research is certainly warranted, it is not leading to the solutions that I know you and I both seek. There are 18 different data bases now in existence containing information about the Bay and research on how to solve our problems.

I understand that EPA is now studying the possibility of a 19th data base, largely as a result of your urging several years ago.

Yet, there is no coordinated data base. You will hear from Dr. Gene Cronin, one of the most respected scientists dealing with the problems of the bay. He also acts as the director of the Bi-State Commission, a committee that now exists between Virginia and Maryland. He has been eloquent in the past, as I note in my statement, on the need for some sort of coordination along these lines.

I call attention to a grant that was made back in 1971 by the NSF. It was for $1.4 million for the development of a management resources bank. Between 1970 and 1973 some $4.7 million was awarded in research grants to develop a "data bank for storage and retrieval of information on matters that would assist in the management of the bay."

To this day there is no such centralized data bank. I think what Dr. Cronin has described as the "existing diversity and stubborn independence of management and research entities" has indeed proven itself very expensive not only in dollars, but in lost opportunities for solutions.

I will not catalog the many problems that you have seen this week. I refer to them in my statement. They are real. They affect real people: watermen, farmers, and hundreds of thousands of people who depend upon the bay for their living.

There presently is no design or order to the research grants that are handed out by many of these Federal agencies, and I think that stands in the way of progress.

I would like to see that kind of a combined effort coming out of this legislation.

In drafting this legislation in the House and discussing it with you and your staff earlier, we chose the Commerce Department as the location for the Office, because it is, in fact, the repository of many of the activities such as NOAA, that deal with marine research and biology. As a result, the success of this effort could have a bearing on conditions that exist in other parts of the country.

It was suggested, for instance, last year in the House hearings that what we are trying to do here could serve as a model for regional research efforts in areas such as the San Francisco Bay.

In addition, we might eventually bring in things such as ocean pollution monitoring under the Federal statute that governs that and other related laws.

So the primary function, as I see this bill, and the Office of Chesapeake Bay Coordination it creates, would be to create an inventory of all past research, to develop a new research plan that will set out the sequence of future activities, and also to review ongoing research activities by the Federal Government now underway.

I think that might address itself to what has been called impulse funding in the research area, the sort of activities that are financed by the Federal Government that sounds good but perhaps do not contribute to the overall plan.

This bill in no way seeks to denigrate the legitimate rights of the States or local governments. That is a point that has been made very strongly by both the Commonwealth of Virginia and the State of Maryland in our lengthy sessions in drafting the original legislation.

That is why we brought the Governors and their appointment powers into the naming of this 15-member board.

The primary purpose of this bill is to insure that Federal dollars are well spent and not to expand necessarily Federal research in these areas.

I want to make another point very strongly and one that is very dear to the heart of the research scientists who are involved in the activities in the bay, and that is that this bill is in no way a threat to the research scientists or their activities.

I do not want it to be. It was never intended to be. I know I can speak for my House cosponsors that we do not want in any way to suppress the diversity that exists if it does not, in fact, fall into the area of duplication or, as we said, unnecessary impulse funding.

No one really is going to have the power to cancel research programs or projects under this legislation, although there certainly can be pressures applied in the sense of public exposure of Federal funding that might be unnecessary.

But we are not trying to reduce research. It is entirely conceivable that if this bill becomes law we may even expand existing research to meet new problems that will be found.

I do not think there is any single answer to the problems that affect the Chesapeake Bay, but in my years in dealing with the House, everyone believes there is a lack of coordination in our search for those answers. Better coordination is necessary.

It is my hope, Senator, that the Senate will be able to act on this bill before the session terminates in early October. I hope that your subcommittee and the full committee will be able to give support to this and bring it to the Senate floor.

Again, I thank you sincerely for your efforts on behalf of this legislation and for scheduling this hearing today. It is nice after our activities together in Detroit to be able to be together in other activities so soon.

Senator **Mathias**. I appreciate your being here and the leadership you have taken on this in the House.

I know the pressure you are under to get back there, but since a legislative record is going to be important to us, I think we might discuss some of the possible reservations that witnesses may express here this morning. Your view on that will be extremely important.

It was apparent to me 8 years ago or 9 years ago that we needed a clearinghouse for information which was being produced about various problems of the bay, a potential for development of resources of the bay.

We also needed a forum of some kind in which people could come together. I am happy that the climate, the relationship between Maryland and Virginia officials, is much better today than it was 8 or 9 years ago.

But at that time it was not particularly close. There was a certain suspicion of Federal officials. It was difficult, as I recall the scene at that time, to envision the kind of cooperation which the bay really needs.

So, it has been one of my objectives since that time to see the formation of the kind of clearinghouse that I think this bill provides.

At the same time there is fear that a new and predatory creature will appear in the bay, a Federal octopus that will somehow or other assume management of the research and will limit the areas necessary for research and will really usurp the management responsibilities of the States.

That is far from my thinking. As you have said in your statement, it is far from your thinking. But I think we need to underscore that point. This is not intended to be a mangement agency in any sense.

Representative BAUMAN. I certainly concur in your estimate of the intention of this legislation. The bill contains a specific proviso that says that it shall not, in any way, supplant any Federal, State, or local agencies' authority.

It simply is an attempt, by the creation of this Federal office, and the attendant committee with it, to coordinate and bring together all of these diverse interests at the Federal level.

I think you are quite correct in your estimation that in the last 10 years there has been a marked growth in the cooperation between the State of Maryland and the Commonwealth of Virginia. When I went to the State senate in 1970, I well recall not only the lack of cooperation between the States, but also the total lack of cooperation between the counties in Maryland at a time when, for instance, oystermen could not catch oysters except in their own counties. That was wiped out by the *Bruce* decision in Maryland. We had a whole new ball game.

In the decade since, not only have the watermen banded together, but the States have come together in a formal compact, the bi-State legislative effort, which I just mentioned, that Dr. Cronin is associated with.

Governor Hughes and Governor Dalton have signed a compact only last year to deal with these matters.

The one complaint I have heard repeated is the lack of coordination at the Federal level. Yet, the Federal Government has the power to fund these research projects without regard to the States. This bill does provide a mechanism to bring the States together in an advisory role.

I am sure that you know, as I know, that there are those who would like to create a superagency that would look beyond the powers of the States and impose upon the entire bay region a regimen that would dictate the way that all things should be done.

I do no want that. I think that would be a mistake. I think it would fly in the face of all of our experience. This bill does not in any way envision that.

But it does say, let us reason together and let us come together and try to solve these problems. That is what we envision.

I hope the record is very clear in that intent.

Senator MATHIAS. I think we need to make the record abundantly clear. The concern that this would become a management agency does exist in the minds of some people. So far as I am concerned, I do not think it ought to be a management agency, either, in the sense of directing conservation practices on the bay and in the bay, or in dictating the direction of research.

It seems to me that what it is is a clearinghouse which tries to bring together, as you say, to reason together and give them the tools by which they can reason together effectively.

Representative **Bauman**. I would say that the only reference to management in the original version of the House bill was removed in the House-passed version at the suggestion of Maryland and Virginia. It does not appear in the House.

But there is one other area in which this Office of Chesapeake Bay Research Coordination may play a role, and that is as a focal point for future activities and suggestions, a forum for discussion. That is something that is lacking right now.

Senator **Mathias**. It is lacking. As I said in my opening remarks, that results in gaps in information.

One of the interesting projects which is now underway which is a cooperative project which is being done as part of the EPA study is the study on grasses being done at Horn Point, where there are intensive studies on what effects the health of marine grasses have.

It is done in tanks in a laboratory atmosphere. EPA has assisted in the construction of eight outdoor ponds in which the health of marine grasses and what the effects are, can be studied.

This probably is one of the really basic problems in dealing with the Bay. When you have a problem with marine grasses, you have problems with fish and oysters and ducks and oxygen and really the whole life cycle of the bay.

This is a good kind of local-Federal cooperation dealing with the basic problem. That is the kind of thing, it seems to me, that not only ought to be encouraged, but ought to be well documented.

The ongoing results should be made available to the interested people so the program develops the kind of support it needs.

Would it make any difference in your mind between a data base and a research program? Those are two phrases that are kicked around in this dialog a good deal. I suspect there may be some semantic problems in dealing with that.

Representative **Bauman**. I think the bill envisions a unified data base. I am certainly not qualified to comment in this technologically advanced age of how that can best be achieved.

But I understand it can be done without a central physical plant. That is one way, but there are ways of hooking up existing computer operations and coordinating the types of programing to be the same in all these different data bases so there can be one central approach to it.

It does not necessarily require a physical approach. That can be accomplished. But the research program is something far different.

I would foresee under this legislation, as a result of reviewing the Federal activities on a periodic basis, that not only would we know what has gone before in the sense of the inventory of all research, but that we would, in fact, develop a future research plan.

It would say: "Here is a gap that exists as you have just indicated. Something must be done to fill that." Perhaps we should divert our scarce resources toward that kind of research and make the suggestion. Ultimately the NSF, Sea Grant, and others would have to make the decision as to whether they wished to follow that.

There is the distinction between data base and research plan as this legislation envisions it.

Senator Mathias. One of the concerns I think people have is the point at which this review would take place. I would use as an example the problems we are having with anadromous fish in which there is a sharp decline in the fish population.

There may be many reasons why there is this decline in anadromous fish. It may relate to marine grasses. It may relate to pollution in estuarine waters. It may relate to many, many different things.

I have sponsored, and certainly support, the legislation which the Congress has recently passed to do a special study on the decline on anadromous fish. But there will be no attempt under this bill to dictate the direction that kind of research should go.

There would not be a czar who would say that you could only look at one particular line of research or one particular approach. The scientific community would retain its scientific freedom to examine whatever it felt was a useful line of inquiry.

Representative Bauman. The closest that we would come to any sort of enforced pressure is the power to request from the various Federal agencies the information as to what they are doing. That might result in judgments being made by those in this office, that perhaps more research should be done in this area and could we consider that in our next budgeting period.

Senator Mathias. Or that an information gap existed or some particular problem was falling between the cracks?

Representative Bauman. But NSF could not be told that they must do this nor could they be told they could not do this. Initiatives such as you suggested for anadromous fish or the legislation sponsored last year by Congressman Studds, of Massachusetts, and myself and others in the House that look toward full research on the rockfish, as we rightfully call it in Maryland, and they mistakingly call it the "striper" in New England, is an example.

Things of that nature would go forward without any interference. But it might well be that suggestions would be forthcoming about what other areas needed to be done.

What if we were duplicating? It is possible that the same research is being done twice.

Senator Mathias. Since we are talking about rockfish, one of the interesting things I saw was a picture of a 90-pound rockfish recently taken. It was noted there was one such left in the Bay.

Representative Bauman. That may be the rockfish I saw stored in the Ocean Cove Market that was taken, I believe, by some of the scientists at Horn Point. It died on the way back. They froze it in order to send it to Minnesota where that particular laboratory has the ability to perform autopsies on rockfish, or at least on large fish.

Senator Mathias. This was a sportsman. I suspect it went to a different type of laboratory.

Representative Bauman. I hope there are no enforcement officials here today.

Senator Mathias. Unless you have anything further, I want to thank you. I think we made it abundantly clear we do not want any octopus in the bay.

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Representative BAUMAN. Absolutely not, unless we could find some commercial possibilities in raising them. Watermen are notorious for that.

Thank you.

[The prepared statement of Congressman Bauman follows:]

STATEMENT BY CONGRESSMAN ROBERT E. BAUMAN

Mr. Chairman, I am very pleased to have this opportunity to testify before your subcommittee on the legislation that I have sponsored in the House and which my colleague from Maryland, Senator Mathias has sponsored in the Senate. This legislation, as you know, deals with a subject that is very important to both Senator Mathias and myself, the Chesapeake Bay. It is a bill that I have spent considerable time developing during the last 5 years and it addresses the decline of the ecological integrity of the Chesapeake Bay which has long been of concern both to myself and to Senator Mathias.

I would like at this time to make some special note of the contributions Senator Mathias has made to the development of this legislation and to the problems confronting the Chesapeake in general. During the several meetings we had on this legislation at the beginning of the 96th Congress, Senator Mathias made a number of observations and proposals that have added immeasurably to the content of this legislation. Furthermore, I am convinced that the esteem in which he is held has added considerable impetus to the passage of this bill when he made the decision to sponsor the original version in this body. There has been an unprecedented level of cooperation between the two states of Maryland and Virginia in the past few years as evidenced in part by their joint endorsement of the revised bill that has passed the House. I am sure that that cooperation has been significantly advanced by the prestige that the Senior Senator from Maryland brings to the effort to forge these links of partnership.

I also want to thank the gentleladies from Maryland, Mrs. Marjorie Holt and Ms. Barbara Mikulski who joined me as cosponsors of this important legislation for the bay area and its residents. I believe the support these distinguished Members have lent to this bill is a good illustration of its merits.

Mr. Chairman, as we consider this important legislation I would be remiss in not mentioning the great contribution made to this legislation by the Secretary of Natural Resources of Maryland, Jim Coulter and his staff. They have labored many hours in offering constructive suggestions and changes, as well as negotiating with the officials of the Commonwealth of Virginia in order to achieve a consensus on this matter. I also want ot thank the Secretary of Commerce and Resources of Virginia, Maurice B. Rowe, and his staff for their advice and assistance. I must also thank Dr. Peter Wagner, former chairman of the board of the Chesapeake Research Consortium, for his comments and suggestions and for the important support he provided to this bill.

The basic purpose of the bill is to improve the coordination of research conducted in the Chesapeake Bay, and it is intended to provide broader participation in the development of priorities for research activities. The legislation would establish a clearinghouse, called the Chesapeake Bay Research Exchange, which would collect, store, and disseminate research information about the bay.

The bill also calls for the establishment of an Office for Chesapeake Bay Research Coordination, which in concert with the Chesapeake Bay Research Board is required to develop a Chesapeake Bay research plan. This plan is required to be updated biennially and is intended to establish specific needs and priorities for Chesapeake Bay research. The Chesapeake Bay Research Board is composed of 15 members, four of which are selected by the Governor of Maryland, four of which are selected by the Governor of Virginia, and seven of which are selected by the Secretary of Commerce. This board is designed to reflect the interests of the Federal, State, and local governments as well as industry and the scientific communities.

H.R. 4417 is authorized at a level of $500,000 for fiscal years 1981, 1982, and 1983, and the bill contains a sunset provision which calls for the termination of its authority three years after the date of enactment.

This legislation was passed unanimously by the House in the 95th Congress after lengthy hearings by two full committees. In this Congress, it has again been approved unanimously by the House following another full set of hearings by two committees.

The problems, however, which lead to the introduction of this legislation remain. There are still over 60 Federal, State and local agencies conducting research on the Chesapeake Bay without an over-all coordinating mechanism or guiding hand. Federal dollars are still being wasted as a result of the duplication of effort that stems from this disorganization, but more importantly perhaps, taxpayer's dollars are being wasted because they are presently being poured into a system that is not leading to the solutions for the problems that confront the Chesapeake Bay. As an illustration of this system and how it is floundering in a sea of federal dollars, I would like to point out to the members of the subcommittee present that there are presently some 18 data bases containing data on the dynamic activities of the Chesapeake. In these hearings we will hear from Dr. Eugene Cronin, who is the Executive Director of the Chesapeake Research Consortium. Dr. Cronin is a well respected scientist in the Bay community and I shall look forward to hearing his statement later today. However, I would like to quote Dr. Cronin on the subject of these data bases, from a paper he presented to the International Codata Conference in Palermo, Italy in 1978. Dr. Cronin said in that paper that, "The data files and data bases in the Chesapeake Bay region are among the most completely documented in the world." However, the Doctor noted, "Because of the existing diversity and stubborn independence of management and research entities, there is no universally accepted and applied system for storage, retrieval and analysis of the date related to the Chesapeake Bay."

Many of these data bases are rapidly becoming dated because they are not being maintained. This situation results in a condition in which so many efforts to measure, record and study the activities of the Bay must begin from scratch. That is past of the reason why we have 18 data bases to record many of the same figures. I should also like to point out that the Environmental Protection Agency has recently proposed the creation of the 19th data base for the Bay to store the results of their study. EPA Administrators have shown little or no interest in improving the systems that already exist and have expressed their intention to terminate the present research efforts on the Bay as soon as the time limit runs out for that program.

If the EPA, or anyone else for that matter, were to develop an overall data management system, it might resemble the "Management Resources Bank" that was proposed in the same study that resulted in the creation of the Chesapeake Research Consortium in 1971. According to the records of the National Science Foundation, some $1.4 million was allocated to the development of this Management Resources Bank in 1973. Furthermore, NSF reports that between 1970 and 1973, some $4.7 million was awarded in research grants to develop, among other things, a "data bank for storage and retrieval of information on matters that would assist in the management of the Bay." Unfortunately, there does not presently exist a Management Resources Bank and there is no data base that is working to perform the functions outlined in the NSF grant description. What Dr. Cronin described as the "existing diversity and stubborn independence of management and research entities" has proven itself to be very expensive indeed.

The result of all this confusion means simply that the dangerous trends remain unabated. The once plentiful rockfish is becoming increasingly difficult to find in the Chesapeake, the oyster harvest has been in a steady decline and crab production has been notoriously unstable in the waters that previously have known only abundance. Entire communities on Smith Island and Tangier Island are threatened by an erosion that many believe is the direct result of the decline in aquatic vegetation and yet the causes of these various phenomena remain a mystery to those of us who wish to take preventive steps.

The disorder in the research effort which is allowed to exist within the present system contributes to perpetuating ignorance. Because there is presently no design or order to the research grants that are handed out by many Federal agencies, there has been little or no progress along the line that extends from basic research in an academic discipline toward the refinement of that knowledge into information that can be of some use to management and policy decision-makers.

This progression, or sequence of research steps, never has taken place in the research involving the Chesapeake Bay and that is a large part of the reason why we still lack the answers to so many questions. But it hasn't been lacking because no one knew to establish a sequence of research.

In 1973, the National Science Foundation funded a research project entitled, "A Method of Applying Research to Environmental Planning and Management:

A case study of issues important to the Chesapeake Bay Region." This study was conducted at a cost of $73,000 and among its conclusions was the following set of remarks: "A critical problem today is the gap between research and the use of research results for planning and management decisions. This is a communications gap between research scientists and users (planners and decisionmakers.) This gap is not the fault of either the researcher or the user. It results because of the unrecognized, ill-perceived, or ill-defined series of steps required to link basic knowledge with decision-making. The research community states that projects they propose are relevant and will provide basic information for societal problems. This situation exists because there are several steps between understanding what is occurring in the environment (phenomenon and processes) and how this information will be used for decisions."

This study, which has been collecting dust since 1973, goes further to propose the establishment of a sequence of research or "research plan" that will insure the production of useful information of practical solutions. This is the plan that is incorporated in this bill and the mechanisms established by the bill are designed to formulate that "research plan" and to carry it out by making recommendations on the funding of research projects by all Federal departments or agencies.

The provisions of this legislation would establish an Office of Chesapeake Bay Research Coordination as an independent office within the Department of Commerce. As the members of this hearing are well aware, the National Oceanographic and Atmospheric Administration is also housed in the Department of Commerce and has been designated to be the lead agency for the Ocean Pollution Monitoring Act. Congressman George Brown suggested last year that the office established by this bill should become a model for other regional research efforts addressed by the Ocean Pollution and Monitoring Act and that it contain some sunset language if it should not prove satisfactory. That language is contained in the bill and it is our intention that this program should serve the purpose of a model for that nation-wide effort.

The Office of Chesapeake Bay Research Coordination established by this bill will have three primary functions as contained in the language before us. It will conduct an inventory of the past research effort, to determine what has been done and accomplished by the wide variety of participants in research over the years. It will develop the "Research Plan" that will set out the sequence of research described above and it will review the on-going research activities funded by the federal government to insure that the money being spent will contribute to the solutions so desperately needed. Furthermore, the Office will have the responsibility for identifying those areas where research may be needed, but is not presently taking place. This will help to insure that the problems that confront the Bay will come to the attention of the Congress so that when additional funds are necessary to carry out vital research, the conduit of information will exist to get that message to those who can do something about it. This state of affairs has been noticeably lacking in the past and the erratic funding for certain research has lapsed because of a chronic discontinuity of federal attention. This condition has been called "impulse funding" by some students of this problem and it has resulted in a haphazard response to the serious problems and conditions confronting the Bay.

There are adequate safeguards in this legislation to insure that the legitimate rights of the states will not be usurped by the creation of this office. A "Chesapeake Bay Research Board" will be established within this office to provide the expertise necessary to make the proper decisions on these technical matters. The Governors of Maryland and Virginia are given the power to appoint two members each directly to this 15-member board. The Secretary of Commerce will appoint the other members of the board, but the Secretary is directed to "insure that the interests of State and Local Government, industry, the public, and the scientific community are represented." The primary purpose of this bill is to insure that Federal dollars are well spent; not to expand the present federal role in these areas and I intend to work along with the other co-sponsors to insure that these safeguards are enforced.

Furthermore, there is little reason to believe that this bill is a threat to the research scientists who have devoted their lives to the study of the Bay and its nature and problems. Diversity need not be eliminated through coordination of efforts. The lack of direction and the subsequent "impulse funding" for research projects do little to enhance the atmosphere in which the research scientist performs his work. A stable continuity of direction and funding will benefit the scientific community dealing with the Bay by allowing them to devote their attention to their primary calling of research rather than forcing them to divert so much of their attention to politics.

There is no single answer to the myriad of problems that afflict the Chesapeake. Sound research policies will do little good if they are not followed by sound management. But there can be no rational management effort without the necessary tools in the form of accurate, timely information concerning the workings of the Bay.

In these hearings, I would hope that every participant would keep in mind that our first and foremost consideration must be the welfare of this vital natural and national resource. The fact of the matter has been and remains that the Bay faces problems for reasons that continue to allude our understanding. This is so despite the millions we have spent on research and the lives that have been devoted to unlocking these mysteries. Furthermore, I hope that all participants will remember that there has never been a dispute over the fact that this research presently lacks coordination or that coordination is necessary if the fruits of any research project are to be realized. I am not interested in creating another office within the Federal Government for its own sake, and I have said in the past that if anyone can demonstrate that this coordination function is being carried out by some organization already in existence, I would withdraw this legislation. However, the fact of the matter is that there is no coordination of the overall effort at present and that this legislation is needed to promote that very coordination. I have heard it said that "coordination is very much like heaven; everybody wants to get there but not just yet." Well, that may be true, but I believe that as it relates to the problem of the Chesapeake Bay, Heaven Cannot Wait.

It is my earnest hope that the Senate will act on this bill immediately so that there will be sufficient time to work out whatever differences there may be between the House and Senate versions and pass this legislation before the adjournment of the 96th Congress. Once again I want to thank the members of this Subcommittee for your kind attention in this matter and for providing me with this opportunity to present my thoughts.

Senator Mathias. Thank you.

Our next witness will be Dr. Eugene Cronin, Director of the Chesapeake Research Consortium.

We are happy to welcome you once again. Dr. Cronin is well known to everyone who has had an interest in marine science. He is one of the national leaders in this field. We are fortunate to be able to claim him as a fellow Marylander.

We are looking forward to his advice and counsel here today.

TESTIMONY OF L. EUGENE CRONIN, DIRECTOR, CHESAPEAKE RESEARCH CONSORTIUM, INC.

Mr. Cronin. Thank you, Mr. Chairman.

I am here as the Director of the Chesapeake Research Consortium. I have a prepared statement which I have submitted and I would like to summarize some highlights from it.

Senator Mathias. Without objection, your entire statement will appear in the record as if read following your testimony.

Mr. Cronin. The consortium is a very unusual structure. It is a small nonprofit corporation created by the Johns Hopkins University, the University of Maryland, the Smithsonian Institution, and the Virginia Institute of Marine Science. It has the function of linking these institutions together on large-scale problems of research in the Chesapeake and of representing a large part of the scientific community.

About two-thirds of the nongovernment scientists of the bay are in the consortium institutions. They assist in any other matter that seems useful to the public interest. We have the large research facilities in these institutions. Some of them go back as much as 55 years in their efforts to understand the Chesapeake.

I wish to make it clear that I speak for the trustees of the consortium which come from these institutions and not formally for the four institutions.

We very much appreciate the opportunity to testify on these bills. The problems facing the bay, as you have so eloquently indicated, are growing so rapidly and create so many conflicts that the urgency of additional understanding of both the general basic functions of the bay and of the way the individual problems can be solved is truly urgent and truly very large.

We appreciate the efforts of your office and Congressman Bauman in attempting to make an important contribution to the improvement and speedup of research on all of those matters.

The consortium is convinced of the desirability of achieving adequate coordination. Coordination in science is a difficult and sometimes tricky thing to achieve. We have put high emphasis on the quality of research and we have put extraordinary emphasis on communication among scientist managers. These are important, but so is the formalization of some degree of coordination, as I will convey to you.

The trustees have looked at these bills and we would like to testify on these points:

One, improved coordination is possible and desirable. We have seen many Federal programs related to the bay by many agencies. They are listed in my testimony. Among those we have seen some examples of excellent, inherent coordination. We have also seen mediocre coordination. We have seen a few examples of poor and wasteful coordination. It is usually fairly good, but it can be improved and we urge that be achieved.

Two, the consortium has looked at the two bills before the subcommittee. We oppose S. 1316 in its present form, recognizing that it parallels an earlier version of the present H.R. 4417. That earlier version has merits, but it retains the management functions which we think are not appropriate in a research office. If it is amended to conform with H.R. 4417, the consortium would support that particular form of the bill.

Three, the consortium views H.R. 4417, as it has reached the Senate, as a constructive effort to bring about a desirable coordination of federally conducted and supported research programs on the Chesapeake Bay. The consortium, therefore, supports H.R. 4417.

We do urge, Mr. Chairman, one amendment to the bill.

On page 6 of the bill, among the duties of the Office for Chesapeake Bay Research Coordination, we recommend that an additional function be considered as follows:

> (5) review proposed congressional legislation which will affect research related to the Chesapeake Bay and comment to the appropriate committee upon the relation of the legislation to the Chesapeake Bay Research Plan.

This function has not been previously stated so far as I know. We urge your consideration.

Mr. Chairman, I would like to add several comments and suggestions from our point of view.

Senator MATHIAS. Is that proposed amendment in the category of what is sauce for the goose is sauce for the gander?

Mr. CRONIN. I think so, yes, sir.

Quite seriously, the Congress acts on independent items of legislation, as you know better than I. It is these independent and powerful directives to the agencies which can encourage them to go their own way without the kind of coordination that I think the bill seeks.

Senator MATHIAS. I understand exactly. I mentioned the anadromous fish bill. I take my full share of responsibility for having promoted that bill. We are all concerned about it. It is an appealing cause.

Whether or not it might have helped rockfish more by doing more in some general research is, I think, a reasonable question to be answered. Only history will provide that answer. Perhaps that kind of a broad approach is useful.

Mr. CRONIN. When my trustees discussed the bill, several serious concerns were discussed. There was concern about whether or not the creation of any office with somewhat vague responsibilities but with the potential for significant participation affecting decisions on which research will happen and which will not.

Second, the present process has some real inefficiencies and difficulties, but it still has some strengths that we thought were, in some cases, very useful. It encourages a competitive approach. It encourages seeking agencies and finding out what their problems are and responding to them. This encourages many kinds of work which has been valuable in a sort of open effort where quality finds its own level. That freedom has strength that we hope will not be jeopardized.

The trustees do support the proposed effort, perhaps with the hope that it will focus attention on the needs of the bay and the solution of its problems and stimulate the long-term support of excellent research to answer basic questions and to assist management.

Mr. Chairman, it may be of interest to note that the consortium is already involved in several matters directly supportive of the intent of this legislation, and I think consistent with it.

We are actively designing and testing a Chesapeake Research Exchange which has as its first target the easy identification by anyone of all on-going, bay-related research.

We have requested that the sea grant programs of Maryland and Virginia give this effort support as their first joint baywide effort.

In addition, we have embarked on an effort to identify what must be learned about the Chesapeake Bay and its uses in the 1980's, the research required, to give maximum assistance to management decisions and to protect and enhance the uses of the bay.

We developed a research plan in 1971 and we will soon review the progress that has been made against that plan. Then we will bring together Federal and State agencies, interstate and regional agencies, the academic community, the concerned political representatives, and public interest groups.

That group will identify what they consider to be the most urgent new knowledge for the next decade. On the basis of that review, the consortium and others will outline the approach, the tentative design, the duration of the study, the required facilities, and the approximate cost of completing the research found to be necessary.

The optimal relationships of this review which we are already starting, to the Chesapeake Bay Research Plan contemplated in H.R. 4417, is not yet determined. If the legislation is passed, I am quite certain that these things can be made complementary and mutually supportive in the public interest.

In conclusion, Mr. Chairman, the Chesapeake Research Consortium offers full cooperation in these and other efforts to assure that research is effective in providing the useful new information required to meet the needs of this complex, useful, and partially damaged body of water during further growth of population and intensification of use.

Thank you for the opportunity to testify. I will be glad to respond to any questions you may have.

Senator **Mathias**. Thank you very much, Dr. Cronin.

How does the consortium maintain links with the research community in working on bay problems?

Mr. **Cronin**. The total community?

Senator **Mathias**. I assume, with your own consortium members, that is an internal matter and there is a broad sharing of information. But what about those who are investigating but not members of the consortium?

Mr. **Cronin**. We have several techniques. One is that we have produced, with the support of EPA, a directory. It has gone out to the whole community. We asked who is doing research and what is happening and their names and addresses and generally what they are working on and what management agencies are concerned and what Federal agencies are concerned.

You have seen this listing. You know it is kind of mind boggling and disturbing in one sense because there are so many. At least we have a directory to them. That is one thing we have accomplished.

Second, we hold an annual informal meeting which is very valuable. It is called the "Chesapeake Chowder and Marching Society and Technical Workshop."

We invite everyone that we can identify as conducting research, every institution, to send someone to that informal, 1-day meeting. Each institution has 10 minutes to say what is new or what they are doing or what they are beginning or what products they have just achieved.

The principal benefit is that each meets the others. They always meet a new group of people they have not known before.

There is no report from that. There is no intention of a report. But it is a general positive effort by the consortium to implement the exchange of mutual knowledge of each other and of general programs.

The third is the idea of CREX, the Chesapeake Research Exchange, as we have developed it. It will reach out to every existing research effort, whether by a county government, a city, a State agency, a Federal agency, or academic institutions, everywhere or any other identifiable group.

It will give us a listing of all research projects in a computer with descriptions so you can go in and ask the computer, who is doing research on any topic, where are they and what is the status of of each project?

Senator **Mathias**. So there is not any doubt on the record, the Chowder and Marching Society is not just consortium members. It is everyone who is playing a role in the investigation?

Mr. **Cronin**. That is correct. It is invited, however, by the consortium because we saw it as a need.

Senator MATHIAS. In your personal view and in the view of the consortium, if you feel competent to express a view of the consortium, is the bay research funding sufficient to meet what obviously is a growing demand for information on the problems that are increasing both quantitatively and qualitatively in affecting the bay?

Mr. CRONIN. Senator, the question is not easily answered because it depends on which year. Congressman Bauman referred to several major pulses in funding and at the peak of one of those pulses, research support is considerably better than in the troughs between them. This is one of the problems.

These pulses have been rather costly to establish. They have all produced some good progress, but they have been phased out.

I think there is not sufficient funding on a stable, long-term level with built-in strong quality control and arrangements to identify the problems and assure that resources are brought to them.

The problem arises because the States have great difficulty in some areas in finding research funds. The Federal process is slow and difficult to move, as you well know. The response to changing problems is very clumsy.

I do not think that the level of funding presently available to the whole research community is matching the growth and the need for answers.

Senator MATHIAS. Of course, you talk about the growth and the need for answers. I think that has to be fully understood by the public. The public is understandably impatient. They say we have been studying the bay for years. What in the world do you need another study for?

When you and I last talked, I think I said it is a little like Satchel Paige: "Do not look back; they may be gaining on you." I think in this case we do not have to even look back to know that problems are gaining on us.

The growth in population in the whole bay country—not just literally on the shores of the bay, but on all the tributaries that make up the Chesapeake Bay system—is putting an enormous new burden. We look to the bay system as our primary human waste disposal system discharging the effluent from sewer plants into the bay or into one of its tributaries.

That load alone is growing and the population projections would indicate that that load may double within the next generation, within a shockingly short period of time.

The various other pressures that an increasing human population produces, plus some of the forces of nature, such as shoreline erosion and things that are not necessarily of human origin really mean that we have to accelerate the effort to understand what is happening.

I am very sympathetic with those who say that we have spent millions of dollars in study and they do not see the application of that knowledge.

Mr. CRONIN. Part of the situation, Senator, as you have observed in your years of service in the State Legislature in Maryland, has been the recent growth of interest in the bay and in extensive support for research. This is a fairly recent phenomenon. It was starved for a very long time.

Research was done on hundreds of dollars and then on thousands of dollars. Now there are potentially millions of dollars in activity.

But that has not long been true.

Senator Mathias. For 300 years Maryland has taken the bay for granted.

Mr. Cronin. That is right. It was a convenient place used intensively. And we now cannot stand that because there are too many people.

Senator Mathias. The population of Maryland was numbered in the thousands. That was a viable method of operation. Now that the population is in the range of millions, we can no longer be that casual.

Mr. Cronin. There are projections that shipping will increase fivefold or sixfold. Electric generation may need to increase tenfold or twelvefold. Recreational use will increase at least at the rate of population and probably much faster than the population. People are going to use the nearby bay.

Also, there is going to be more intensive harvesting of our fishing resources, as well as greater industrial activity around the edges with all the products that have to be managed and prevented against spilling. All the problems are growing very rapidly.

Senator Mathias. On the catalog you have just given us, who do you think are the ultimate consumers in the dissemination of bay research information?

Mr. Cronin. I think there are several audiences that must be served. I think that one primary one is the research community. Good research is based on understanding what others have learned and adding to that something that no one knew before. That is one target.

At the same time, the management agencies, the ones that must make decisions, are the ones that must utilize the information. I think any system must be geared and designed to convey at the earliest date new learning to State, Federal, and local agencies.

I think the third audience is the public. One of the great and encouraging changes has been increase in public recognition of the public problems. There must be a mechanism for translation of technical information to reliable, widely disbursed, readily available products for use in the schools and by the general public.

I think that all these targets exist and must be met.

Senator Mathias. Do you have any strong feeling as to where an Office for Bay Research should be lodged in the executive branch?

I am not talking about physically whether it ought to be at Thomas Point Light or on a scow moored between Tangier Island and Smith Island so that it is exactly evenhanded between Maryland and Virginia, but where ought it be in relation to existing Federal departments?

Should it be a new and independent agency? How should it operate?

Mr. Cronin. Part of the answer, of course, will depend on how the executive agencies are organized in the future. I am not sure that is easily predictable in an election year and in a period when changes are suggested from time to time.

At the present time the Department of Commerce is the most directly concerned. Many of the problems are related to the fisheries, to the sea grant effort, and increasingly to marine pollution. All of these are centered in Commerce. Of course, Commerce does not primarily deal with the transportation and does not deal directly with mining and matters of that sort.

No one executive agency includes all of the functions which involve research interests. Liaison will be essential.

Certainly Commerce is a major coastal center. It is not the only center, but no one agency has this. Unless you made it an independent executive agency, this would be the case. That has its costs.

I really have no simple answer to the question.

Senator MATHIAS. Let me pursue this general area.

You and I have discussed in the past the Title II Commission. The infirmity of a title II from a State point of view is that the States participating only get a single vote on a title II board as against a multiple vote for the Federal agencies of one per agency.

So, the voting strength may have something to do with where you put this agency.

Under the proposal in this bill, there is a 15-member board. Eight would come from Maryland and Virginia and seven from the Federal side. That would give a predominance to the States.

But what is less clear is whether the Board will run the Office or whether the Office will run the Board. That may go to my earlier question about whether or not we have a Federal octopus in the bay.

Mr. CRONIN. That is a very important question. I think that Congressman Bauman alluded earlier to Congressman Brown's comment that this whole idea is innovative, that is, different from the way the Federal Government is attempting to approach coordination for a region.

Therefore, several aspects of it are not tried and tested and simple and clear.

I have served on many commissions and I have served under a good many commissioners. I have a strong preference for a board which is the policy board and which has real impact, not just to review the Office, but within appropriate limits to control that Office's effort.

I would hope that would be clear in the legislation that the Board is a policy group drawn from the resident States, which are critically important, as well as from Federal sources.

I think the balance in the present bill is healthy.

Senator MATHIAS. But it ought to be clear that the Director is the servant of the Board.

Mr. CRONIN. In my opinion, yes.

Senator MATHIAS. It is my opinion also.

I think from what Representative Bauman said it is his opinion also.

If that is not the case, then that director will be the octopus.

Mr. CRONIN. I agree.

Senator MATHIAS. If he takes the Board's findings, the Board's expressed views as really advisory, then, in fact, you will begin to see the creation of a management agency.

I think if you do one thing in this area it ought to be able to provide legislative history that that is not the intention of anyone who sponsors this legislation.

Mr. CRONIN. I agree entirely with those comments.

Senator MATHIAS. I am wondering if you could just comment very briefly on this. At what point should a Federal research program be reviewed for consistency?

It seems to me this is another important point. It goes to whether or not there was interference with the freedom of scientific inquiry.

If this agency were to come in at inappropriate times, it could have a more blighting effect than merely reviewing the whole program and saying: "Well, you have a gap here or an omission there."

Mr. CRONIN. I think this has been a troublesome item in the legislation through its history. The question is: At what point in the whole process would the Office review an idea or a program or a statement of expectation to participate in some kind of research on the bay or to support it.

Frankly, I do not know a simple answer. If you review a program back in the early planning of a general departmental program for the next 5 years, the idea will be so vague as to have little meaning.

At the other extreme, if you take every project and every activity and try to deal with them, it is such enormous busy work at such a late stage that I think it would be destructive.

I think that one of the urgent matters, if this office is created, will be the clarification of that review practice, which is not clear in the present legislation. Perhaps such practices should be directed by the policy board.

I have not been able to discern a single point for review which would meet all needs.

Senator MATHIAS. This is one of the danger areas, it seems to me.

Mr. CRONIN. That is correct.

Senator MATHIAS. You and I have worked with the old Chesapeake Bay and Tributaries Committee of the Maryland General Assembly. Any plan, any master plan that might have been drawn at that time that involved a massive investment in studying marine grasses would have been considered ridiculous.

Yet now how we wish we had done that. It is an illustration of how really difficult it is for that kind of planning to be done and how blighting it would be to put rigid controls.

Mr. CRONIN. If I may comment on the content of the plan, I would like to suggest one line of thought.

This gets into the implementation rather than the legislation, but to indicate legislative history can be helpful.

I would hope that the stated plan would emphasize research which is needed, but be very careful to encourage research of any kind which is of excellent quality.

In other words, permit the ability to respond to a new unforeseen problem and permit and encourage the ability of independent scientists to come in with fresh ideas that no one recognized at the time the plan was drawn. If the plan becomes a rigid blueprint, we have lost the enormous value.

Senator MATHIAS. It must be open ended.

Mr. CRONIN. It must be open ended. So it should emphasize the need rather than put in a specific prioritized list.

Senator MATHIAS. What is the difference between the Senate bill and the House bill? The Senate bill provides that the Board shall advise the Director of the Office with respect to carrying out of the duties and responsibilities set forth in the act.

Do you have any feeling about that particular language?

We commented in general on that already. Perhaps the language ought to be stronger and maybe direct or instruct the Director, some stronger language than advise.

Mr. Cronin. In paragraph 2 under the duties of the Board it states: "Advise the Director of the Office with respect to carrying out duties and responsibilities set forth in this act." I think language in that general direction is important and desirable.

Senator Mathias. Without something of that sort, some language in that area, there is no legislative mandate for communication between the Director and the Board.

Mr. Cronin. I agree.

Senator Mathias. We would assume there would be communication. But in the bureaucratic world, assumptions do not always hold up.

Mr. Cronin. I think improvement and clarity of that would be very constructive to protect the quality of the work.

Senator Mathias. We have touched on need for an open ended plan. Do you see any useful safeguards which would remove any possibility of loss of support for scientists with fresh ideas for research?

Mr. Cronin. Senator, there must be an effective mechanism for response to innovative ideas or new needs which were not in the minds of those who wrote the plan when they prepared it.

The essentials of proper response lie, I think in promptness and in assurance of high quality and need for the research for fundamental or applied use.

There are established procedures for review in the National Science Foundation and other Federal granting agencies and benefit can be drawn from that experience, although there are important differences between review by the potential grantor and examination by this office.

I suggest alternative means of identifying meritorious exceptions to the stated research plan. The procedure should be selected and approved by the Board.

The review and action must be done without interfering too much with the process and without delaying the idea for another 6 months or making it uncertain for the agency or the proposer.

Senator Mathias. Since there are some subtle differences in interpretation of words in the scientific community, maybe you could tell us for the record what you see as the distinction between a research "program" and a research "project."

I think that is an important distinction. One of the concerns that has been expressed is that it would envision a proposal by proposal review of research projects.

Is this what you forsee may happen?

Mr. Cronin. I think it must not. I think it would be too costly and time consuming. It would interfere with project application and completion.

There is no small group that you can assemble in that office that is capable of writing a reasonable statement about every single project. That must be precluded.

Senator Mathias. You cannot stand around in laboratories and look over the shoulders of every researcher.

Mr. Cronin. That is correct. I think "program" is the proper emphasis.

It is not easy to identify the best point for reviewing a program. As you know, the complex Chesapeake Bay program of EPA has been an evolving, changing and highly dynamic set of ideas about what should be done and how it should be done. When could it have been reviewed?

I am still finding it to be seriously difficult to know where that entry should be.

But it must not be at the individual research project level.

Senator **Mathias**. The legislation clearly contemplates a research plan. What is your view, in very broad terms, of a plan?

Mr. **Cronin**. Mr. Chairman, the language of the bill, as presently drafted, states specifically under the functions of the board:

> (1) develop a Chesapeake Bay Research Plan consistent with the missions and interests of appropriate agencies and States, and update this program biannually to reflect changing priorities in Federal and State management needs.

There is no emphasis there on the need to recognize and support fundamental research—the comprehension of the Chesapeake Bay system—which I see as building a rich bank account which management will draw knowledge from to meet future needs.

I would not wish that emphasis minimized. It is as important as today's management problems.

The plan should include fundamental knowledge required, as well as management answers needed.

Senator **Mathias**. But not specific mechanical details?

Mr. **Cronin**. That is correct; yes, sir.

Senator **Mathias**. Dr. Cronin, earlier in your testimony you referred to the fact that there had been ups and downs in coordination and cooperation in working on the bay over the years. Sometimes it was good and sometimes it was less good.

In your long experience, have you been able to isolate and identify the characteristics that accompany a good climate of cooperation, a good example of coordination?

Mr. **Cronin**. I am not sure I can derive general characteristics, but I would like to comment briefly.

I think the best coordination we ever had on the Chesapeake was accomplished by the Virginia Institute of Marine Science, the Chesapeake Bay Institute at Hopkins, and the Chesapeake Biological Laboratory at the University of Maryland on two occasions in particular.

One was to create the data base on which the hydrologic model of Chesapeake Bay was created. Without sacrificing our separate entities, we simply sat down in concert and wrote a research program, that we found to be so big that none of us could do it.

Then we divided the parts of the bay. Where we needed a lot of boats, we put them all together. If we only needed one or two, one institute took that part. It was a complementary plan which was easily, rationally, and effectively accomplished without a competitive or wasteful effort at no cost for coordination.

There was no overhead whatsoever. We simply got together and did it.

The second was accomplished by the consortium when Hurricane Agnes came. The directors of those three laboratories were at a meeting in Fredericksburg. Waters of the river rose and finally the waters around the area rose. They flooded us out of the meeting room.

About at that point we realized that the event was so big that it was going to be a major event for Chesapeake Bay.

The research laboratory vessels were out on the bay the next morning to try to understand what was happening. We did not have any money. We did not have any promise of support. We did not know who was going to pay the bill. We later suffered in covering the costs.

But we knew the event had to be seen. In that particular case, the concern for the bay, I think, was the primary driving force. We did not learn all we wished, but we learned a great deal. The consortium has produced a major volume about the effects of Anges.

That is the simplest kind of excellent coordination where the interest and the concern for the system and for the welfare of the bay is pushing people.

I think the worst kind in general is where any agency is simply trying to serve its own image and is not guided by what is best for the whole Chesapeake system.

How to move toward one and away from the other is not always easily discerned. One that I think came in without much coordination was the U.S. Geological Survey program in the Potomac.

They were excellent people doing very good work coming from their own previous experience and creating what they thought would be a good program. And it is.

So far as I have been able to discern, very little effort was made to meet with, at an early planning stage, other people that had knowledge of the area and who might do work there and say: "Is there anything we can do mutually that is better than we can do separately?"

I do not mean to be overly critical because the quality in that case is high.

Senator MATHIAS. But when you are doing a project you can often do two or three things at the same time?

Mr. CRONIN. That is exactly right; yes, sir.

Senator MATHIAS. I can give you an analogy from the political world. If you are taking a political poll in the interest of one candidate, you can add on a question or two that will illuminate the whole political scene. It does not increase the cost of the poll at all. In fact, it probably lends it a little objectivity.

The same kind of thing can happen in the scientific world.

Mr. CRONIN. Exactly. Piggybacking is necessary. The research vessel *Warfield* is an example. It is an expensive boat to operate When it goes out they try to get as many projects simultaneously on there as they can, serving the whole Chesapeake Bay region.

The essence is knowing each other and understanding what you are doing and making an honest attempt to coordinate.

Senator MATHIAS. You suggested an experience which could well serve as a model.

We are very grateful for your being here today. We would be glad to have any further comments you would like to make.

As I said earlier, your original statement will be included in the record in full.

[The prepared statement of Dr. Cronin follows:]

STATEMENT OF DR. L. EUGENE CRONIN, DIRECTOR, FOR CHESAPEAKE RESEARCH CONSORTIUM, INC.

Mr. Chairman and members of the Sub-Committee, I am L. Eugene Cronin, Director of the Chesapeake Research Consortium, Inc. The Chesapeake Research Consortium comprises the Johns Hopkins University, the University of Maryland, the Smithsonian Institution and the Virginia Institute of Marine Science, part of the College of William and Mary. These institutions employ about 63 percent if the non-federal scientists of the Bay area, operate the major research facilities and extend back as much as 55 years in research related to the Chesapeake Bay, frequently undertaken in close cooperation. We have extensive linkage with the other research institutions and scientists of the area, but we do not formally represent them. The Consortium exists to undertake multi-institutional research related to the Chesapeeake Bay and to perform other services of regional value. Our testimony presents the view of the Board of Trustees, not necessarily that of the four institutions which are consorts.

We appreciate this opportunity to testify on an important matter—effective coordination of research related to the Chesapeake Bay, the Nation's largest and most valuable estuary. Research of high quality is essential for the future welfare of the bay and its valuable uses. Coordination of that research can minimize wastage of public funds in undesirable duplication, and reduce the accidental, and all too frequent, omission of essential areas of study. The Consortium supports the objective of coordination of federally supported and conducted research and agrees with the findings and purposes specified in section 2 of both H.R. 4417 and S. 1316.

As you know, the desirability of achieving adequate coordination has long been recognized by the Consortium and by the sponsors of both of these bills. We have assisted in the long series of changes in content and language which resulted in the present bills, and we especially appreciate the patience of the sponsors in considering such changes. We have previously urged that the matter of coordination of research among executive agencies of the federal government is an executive responsibility and that the Executive Department might be effectively encouraged to achieve closer cooperation in the matter. That approach has not been satisfactory to the sponsors, so that the Trustees have again reviewed the proposed legislation with constructive intent.

The Trustees conclude, and testify to you, that:

One, improved coordination in federally supported research related to the bay is possible and desirable. We have been a series of major Federal programs related to the Chesapeake—recently by the National Science Foundation, the U.S. Army Corps of Engineers, the U.S. Geological Survey, and the U.S. Environmental Protection Agency. There have also been projects or programs by the National Marine Fisheries Service, the Sea Grant Office, and the Office of Coastal Zone Management of the Department of Commerce; the Fish and Wildlife Service of the Department of the Interior; the Smithsonian Institution; the Office of Naval Research and Naval Ordnance Laboratory; the National Aeronautics and Space Administration; the Department of Energy; the Department of Transportation, and others. Some of these are in-house programs, and some involve external contracts and grants. We have observed cases of excellent cooperation and coordination, moderate or minimal coordination and poor coordination among these agencies. In our opinion, coordination is usually fairly good—but there is room and need for improvement. We urge that it be achieved.

Two, the Consortium opposes S. 1316 in its present form, recognizing that it parallels an earlier version of present H.R. 4417. It has many merits, but it retains management functions which we consider to be inappropriate in a research office. There are other undesired items in this bill. If it is amended to conform with H.R. 4417, the Consortium would support this bill.

Three, the Consortium views H.R. 4417, as it has reached the Senate, as a constructive effort to bring about a desirable coordination of federally conducted and supported research programs on the Chesapeake Bay. The Consortium therefore supports H.R. 4417. We recommend the following amendment to H.R. 4417.

Page 6. Section 4b, dealing with the duties of the Office for Chesapeake Bay Research Coordination, add (after line 6) (5) review proposed Congressional legislation which will affect research related to the Chesapeake Bay and comment to the appropriate Committee upon the relation of the legislation to the Chesapeake Bay Research Plan.

Mr. Chairman, I would like to add several comments and suggestions. In discussion leading to the adoption of the position of the Trustees, serious concern has been expressed about the creation of an office with somewhat vague responsibilities but with the potential for significant participation in decisions as to which research shall go forward and which shall not. Further, the present process for planning and selection of research is considered by some to have substantial strength and important freedoms of venture which should not be jeopardized. However, the Trustees support the proposed effort, perhaps with the hope that it will focus attention on the needs of the Bay and the solution of its problems and stimulate long-term support of excellent research to answer basic questions and to assist management.

Mr. Chairman, it may be of interest to note that the Chesapeake Research Consortium is already involved in several matters directly supportive of the intent of H.R. 4417 and potentially consistent with it. We are actively designing and testing a Chesapeake Research Exchange which has as its first target the easy identification by anyone of all on-going Bay-related research. We have requested that the Sea Grant Programs of Maryland and Virginia give this project short-term support as their first joint Bay-wide effort. In addition, we have embarked upon an effort to identify what must be learned about the Chesapeake Bay and its uses in the 1980's to give maximum assistance to management decisions and to protect and enhance the uses of the Bay. We developed an important research plan in 1971 and will soon review the progress which has been made. Then, the Consortium plans to bring together federal and state agencies, interstate and regional agencies, the academic community, the concerned political representatives and public interest groups. This assembly will identify the most urgent new knowledge for the next decade. On the basis of that review, the Consortium and others will outline the approach, tentative design, duration of study, required facilities and approximate cost of completing the research found to be necessary. The optimal relationship of this review and plan to the Chesapeake Bay Research Plan contemplated in H.R. 4417 is not yet determined. Surely they can be integrated effectively, as can other mutual interests.

In conclusion, Mr. Chairman, the Chesapeake Research Consortium offers full cooperation in these and other efforts to assure that research is effective in providing the useful new information required to meet the needs of this complex, useful and partially damaged body of water during further growth of population and intensification of use.

Thank you for the opportunity to testify. I will be glad to respond to any questions you may have.

Senator **Mathias.** I might note for the record that Dr. William J. Hargis, Jr., is present in the room. We are very privileged to have him with us this morning.

Our next witness is Mr. Louis N. Phipps, Jr., Deputy Secretary of the Department of Natural Resources of the State of Maryland.

TESTIMONY OF LOUIS N. PHIPPS, JR., DEPUTY SECRETARY, DEPARTMENT OF NATURAL RESOURCES, STATE OF MARYLAND, ACCOMPANIED BY LEE ZENI, ADMINISTRATOR OF TIDEWATER ADMINISTRATION, MARYLAND DEPARTMENT OF NATURAL RESOURCES; AND DON BUDLONG, ASSISTANT TO THE SECRETARY OF COMMERCE AND RESOURCES, COMMONWEALTH OF VIRGINIA

Mr. **Phipps.** Thank you, Mr. Chairman.

On behalf of Secretary Rowe of Virginia and Secretary Coulter of Maryland, I am pleased to be here today to offer joint testimony on the Chesapeake Bay Research Coordination Act.

Virginia and Maryland are delighted to offer this joint testimony. We are pleased to note that our joint testimony is the result of very close cooperation between our two States over the past year. One year ago, Governor Dalton and Governor Hughes signed an agreement establishing a bistate committee of operational agencies from both States.

This is a working committee of State agency staffs who work together to deal with our mutual management concerns and interests on the bay. The committee is largely responsible for our work on the proposal before you.

In addition to this executive cooperation, the General Assemblies of both States enacted legislation in their 1980 sessions establishing a Chesapeake Bay Commission. It consists primarily of legislators of both States and has the broad purpose of furthering interstate cooperation on bay matters.

In February our two States submitted a joint position paper on the House version, H.R. 4417. We were especially pleased that H.R. 4417 was amended to incorporate the changes that we recommended.

We would be most appreciative if S. 1316 were amended to follow verbatim the language of H.R. 4417 as that bill passed the House of Representatives.

If the Senate version is amended as we suggest and the bill is enacted into law, we pledge our mutual support to make the Office of Chesapeake Bay Research Coordination function as intended.

We see a number of advantages to Virginia and Maryland in the proposal.

First, it should definitely help to tie Federal and federally supported research together.

Second, it will create a focal point of Federal responsibilities and a definite direction for Federal efforts, which State policymakers can assess.

Third, through the policy board, it will give the States an excellent opportunity to help set the Federal agenda for the research needed on the bay.

Fourth, the States will be able to influence the principles and guidelines by which the research will be carried out.

Fifth, the States will be able to bring to bear on the Federal Establishment the real needs of those who actually use the bay, work its resources, and depend on it for their livelihood.

Sixth, it will foreclose the tendency for various independent bay studies and institutions to seek Federal or other financial support to establish research data exchange systems.

Seventh—and very important to Virginia and Maryland—it will help to focus Federal attention on one of our Nation's priceless resources.

Mr. Chairman, we trust that our joint testimony in some small way conveys the deep sense of commitment Virginia and Maryland jointly share to the future of the Chesapeake Bay. We are anxious to make this proposal work.

We do want to express to you, Senator Mathias, and to Congressman Bauman, our gratitude for inviting our participation and heeding our concerns.

Thank you.

I have with me today Lee Zeni, the administrator of the Tidewater Administration in Maryland, and Don Budlong, Assistant to the Secretary of Commerce and Resources in Virginia.

In regard to my good friend, Gene Cronin, and an amendment that he suggested from the Chesapeake Bay consortium group, I would oppose that basically for two reasons.

Basically, we support the concept, but my reasons for opposing it are that we believe that the group should automatically review any congressional legislation. I believe if we amend the bill, it means sending it back to the House for concurrence.

We would hope that the committee would take this upon themselves to review regardless. We do not think it needs to be part of the bill.

With that, I would like Lee and Don to come up and join me.

Senator **Mathias**. Gentlemen, we are happy to have you here this morning. Do you want to add anything to what Mr. Phipps has already said?

Mr. **Budlong**. Mr. Chairman, my name is Don Budlong. I am Assistant to the Secretary of Commerce and Resources. I do not need to add much except to say that on behalf of the Governor and Secretary Rowe, we do want to express our appreciation to you and to Congressman Bauman for inviting our testimony and our participation in redrafting this bill as it was originally introduced.

I might say that we have been at this quite awhile and now we think it is time to sit down and try to make the proposal work. We do think we have a good framework as it passed the House of Representatives. Now it is simply time to make it work.

Senator **Mathias**. I can say amen to that.

We are very pleased to have the active support and participation of Senator Warner, who has been extremely interested and active in this. He has been delayed in arriving here at this hearing this morning.

His participation has been an important ingredient.

In Mr. Phipps' testimony, he stated that he thought the States could be the driving force behind better coordination, better use of bay research. I agree with that fully.

I think that is exactly right. But would you suggest the Bistate Working Committee might be the forum for defining the bay issues for establishing research needs, describing the findings and drawing the implications that can be drawn from those findings, and reporting to the public on federally funded and State-conducted bay research?

Mr. **Budlong**. Yes. Not only the Bistate Working Committee, which is the executive working group of agencies dealing with the more mundane management problems, but also the Chesapeake Bay Commission, which was recently established by both legislatures and consists primarily of legislators from both States.

I think these two forums can identify the research priorities. In that fashion it can convey those priorities to the policy board.

That, I think, is the States' main avenue into helping to drive this particular Office in terms of what the States want to see done.

Senator **Mathias**. I think that is a critical relationship. It is useful to have your view of how it would work.

Do you foresee regulations, perhaps interstate regulations or perhaps some sort of companion regulations, that would result from the working of the bistate committee?

Mr. **Budlong**. I do not see regulations being thrust upon this particular Office. I do see the two States working through this Bistate Committee and the Chesapeake Commission, certainly suggesting some principles and standards and perhaps guidelines by which the policy board would make its decisions in terms of its research on the bay.

But I do not see States drafting regulations. I do not think the Federal representatives would stand for that, for one thing. I just do not think regulations, as we perceive them, are necessary in this instance.

Senator **Mathias**. What about the possibility of regulations that might be local in their application, some form of regulation of land use or construction practices or something of that character?

Mr. **Budlong**. No; in a word. Of course, this was one of our original concerns in Virginia when the bill was first introduced and discussed. This gets back to the question of management.

This is one of the points which we stressed. We do not want to see this policy board get involved in the management decisions.

Senator **Mathias**. I am talking about the Bistate Working Committee still and not the policy board.

Mr. **Budlong**. My answer would still be no. The Bistate Working Committee on the executive side is a group of agencies, six from each State, which deal with the daily management problems of the Chesapeake Bay, whether it be bathymetry or water quality. We do not get into proposing regulations to be promulgated by States.

Mr. **Zeni**. It is possible, because as a companion, the Chesapeake Bay Commission is made up of the legislators, that if the Bistate Working Committee would come up with problems that were primarily one of legislation, that Commission might be able to enact legislation that would help both Virginia and Maryland.

Senator **Mathias**. Legislative committee members might then be able to prevail upon their colleagues to adopt legislation?

Mr. **Zeni**. Yes, sir.

Mr. **Budlong**. Separately in each State. But the Commission itself does not have the authority to do that right now.

Senator **Mathias**. I think that is important to get on the record. These are the areas of concern. When you talk with citizens and local officials, these are the concerns they have.

Mr. **Zeni**. I would like to add one more point about the Bistate Working Committee.

One thing that is probably not evident from the paper that comes out from the committee is that the scientists are part of the working committee. They attend the meetings. The three or four meetings we have had, the scientists are there.

So they are part of putting together the kinds of—first, the discussion of problems and coming up with the solutions. It might require research and they are there.

So it is not a question of management agencies, of State government imposing only that kind of research needed for day-to-day, or what we call real-life problems. They are there and they can impose basic research that Dr. Cronin was talking about, the kind of research that would advance our knowledge in a lot of these areas.

Senator **Mathias**. Dr. Cronin mentioned the fact that at some periods in history we not only did not enjoy the present good state of relations between Maryland and Virginia, but even between counties that were rivalries and controversies.

Has the Bistate Working Committee addressed intercounty cooperation and things such as county planning and county zoning and other county building regulations and that type of thing that we see can have a bigger impact on what happens in the water than previously anticipated?

Mr. ZENI. It has in Maryland because we have a management program. It is a network of local counties around the bay, Baltimore City, and State agencies.

That program is housed in the Department of Natural Resources for Coordination. Therefore, we impose on the Bistate Working Committee through that organization.

I am not sure in terms of Virginia.

So far as Maryland is concerned, the counties concerned in terms of land-use planning, following changes in zoning regulations and all the rest, are influenced by the coastal zone management program and, in turn, is influenced by the Bistate Working Committee representation of Maryland.

Senator MATHIAS. All the bell ringing may evoke memories of school days, but what it does for me is tell me that the time has come to jog to the Senate floor for a rollcall vote.

I regret the inconvenience to you, but this committee will have to stand in recess for a few minutes while I run over to the Capitol and back. I will be back just as quickly as I can.

[Recess taken.]

Senator MATHIAS. Ladies and gentlemen, we will resume now.

I regret to say I fear there are going to be other interruptions. On the Senate floor we are voting on a matter which has grave implications for Chesapeake Bay. It is the whole question of regulation of nuclear power, the creation of storage sites for nuclear waste and related matters.

This is so you will understand the urgency of the vote. But I do anticipate there will be further votes.

One thing I was particularly anxious to get to with the Maryland and Virginia representatives is the question of foreclosing duplicative research.

Do you have any examples in mind of duplicative research that may duplicate ongoing research?

Mr. ZENI. I think early on there was a possibility that the research that you sponsored, the EPA Chesapeake Bay Study, could have been duplicated with the Corps' study in terms of the state of the bay and the future of the bay.

But I believe, because they did put together the joint Virginia-Maryland Federal group to lay out the work for the Chesapeake Bay study on the EPA, it is not duplicative.

But it is ad hoc. It is not something that would have been mandated. It could have very well gone forward and duplicated some of the work done by the Corps in terms of the Bay Model Study.

I think there could be duplication between the work that the States do. For example, in the Coastal Zone Management Program and in the tidal fisheries program—as a matter of fact, the tidal fisheries program does give me some concern in terms of the emergency striped bass legislation that passed Congress.

A million dollars was allocated to that program. About $200,000 is going into direct work in the bay which the State of Virginia and the State of Maryland, through CBL and others has put through in terms of a program.

Most of it is going to Federal research laboratories. Some is going to a laboratory out in St. Louis, which does not strike me as using the million dollars in a very effective and efficient way.

Whatever they are going to do with it, it sounds to me like it would be duplication.

I have no other examples I can think of.

Senator MATHIAS. In the case of the EPA study, you considered it a near miss instead of a collision?

Mr. ZENI. Yes, a near miss. But it came out all right, sir.

Senator MATHIAS. There has been a suggestion on the part of the States that the membership could be increased to five persons each from Maryland and Virginia. That would provide not only an equal voice, but a little more equal voice.

Obviously this relates to the State concerns about Federal domination in the bay, what I called earlier the Federal octopus as a new bay creature.

What primarily worries you in this area?

Mr. BUDLONG. Well, I think we have the underlying concern that were the Federal Establishment to have 11 members, as originally proposed, and the States only 4, we simply would be outvoted.

The States, through their police powers, are the institution through which many of the research results and management recommendations have to be implemented. Before getting to that point, we wanted to be sure that we had something to say about what was going to be researched.

I think that was the underlying problem that we had with the original proposal, Senator.

We have our own authorities to deal with the bay. We also believe we are working extremely well together now. We just want to have more to say about what is going on.

Mr. PHIPPS. Going back to your experience in the Maryland General Assembly and talking about the Chesapeake Bay Affairs and Tributaries Committee, which has long since been abolished and changed——

Senator MATHIAS. Under the leadership of Captain Harris.

Mr. PHIPPS. Yes.

We have made great strides. Here we have the Secretaries of Maryland and Virginia and even the Governors of both States supporting this legislation This is a real milestone. We thank you and Mr. Bauman for your efforts in this endeavor.

We believe if this bill is passed it will have accomplished our goals.

Senator MATHIAS. From your statement you make it clear that you share my concern and that which Mr. Bauman expressed when he was here, that the proposed office should not extend into management activities.

What would you think would be the adverse effects of getting into management? It is very clear in my mind, but I think the record ought to reflect that we are exactly in tandem here.

But I think together we can regulate and have laws that jointly affect the fisheries of both States. I think that is the difference.

Mr. BUDLONG. I think if the institution we are discussing were to have management authority, we would not be, at this point today in the testimony. We simply would not have the support of the States.

In no fashion could I conceive of Virginia supporting an instiution of this nature which did have management authority on the bay, this type of institution.

Senator MATHIAS. Even indirect management authority by being able to mandate or to cancel a research initiative?

Mr. BUDLONG. Correct; yes, sir.

Senator MATHIAS. I am going to be repetitive on this subject. I think the legislative record has got to reflect that is what we were talking about and contemplating when we talked about setting up this office.

Where do you think the office should be? Should it be in an executive branch agency? Or should it be a totally independent office?

Mr. ZENI. Senator, I would support Dr. Cronin's view on that in terms of the Department of Commerce. It is the center at the moment for a great deal of work being done in the bay.

Senator MATHIAS. So, you would lose coordination if it were not in close contact with those activities?

Mr. ZENI. Yes, sir.

Senator MATHIAS. I am going to ask Maryland and Virginia each to supply for the record, if you will, the level of funding of research by each State. I think that is an important element for the record.

I will not ask you to call up that dollar figure from memory right now, but please supply it for the record. I would appreciate it.

Mr. ZENI. We estimate that Maryland, through the Department of Natural Resources, puts about $21 million annually into research and activities dealing with conservation programs in the bay. I exclude anything that is not related somehow or another to the water-land interface and the aquatic resources and powerplants siting and investigations of that type.

We have estimated about $21 million.

Mr. BUDLONG. I cannot comment right now, Senator.

Senator MATHIAS. If you would supply that to the committee, we would appreciate it.

One of the facts about the bay is the unitary character of the bay. What happens in one part of the bay affects every other part of the bay.

That being so, we cannot overlook the fact that the major tributary of the bay is the Susquehanna River which rises in the State of New York and flows for many miles through the State of Pennsylvania.

The Potomac rises in Fairfax Rock out in western Maryland, but its tributaries flow through Virginia and West Virginia. There are many miles of tributary in West Virginia.

So Pennsylvania and West Virginia, as well as Maryland and Virginia, are vitally affecting what happens in Chesapeake Bay.

Do you have any contemplation that States such as West Virginia and Pennsylvania and perhaps Delaware or even New York might someday have to be brought into this whole coordination effort?

Mr. ZENI. One part of the EPA study is the management group. Their concern in terms of implementation as to how Pennsylvania, in particular, and of course the Federal presence could remain after the EPA study completes its work in 1982.

One of the suggestions has been that the Bistate Working Committee include representation from the State of Pennsylvania and Delaware and Region III headquarters to continue working after the EPA group has left in 1982.

So, it has been discussed, Mr. Chairman.

We have not talked about West Virginia, only Pennsylvania, Delaware, and Region III EPA group.

Senator MATHIAS. That perhaps is one of the areas that the policy committee might ultimately think about and make recommendations in this area. I think clearly the traumatic and tragic events of Three Mile Island demonstrate what close relationships exist between Pennsylvania and the quality of the water of the Chesapeake Bay.

I hope we do not have to have that kind of dramatic education very often.

Gentlemen, unless you have something that you want to say to supplement your testimony, the committee is very grateful to you for being here and for your thoughts on this subject.

Mr. PHIPPS. Thank you, sir.

Senator MATHIAS. Our next witness is Gerald D. Seinwill, Deputy Director of the Water Resources Council.

I regret delaying you, but the bells ringing are another call to exercise for me. Rather than interrupt you in the middle of your remarks, we will take another short recess.

I will attempt to get over to the Capitol and back as quickly as I can.

I will take this opportunity to note for the record that we will include the two sequential articles which have appeared in the Easton Star Democrat which lists some of the results of the recent tour of the bay.

Without objection, so ordered.

[The articles referred to follow:]

[From the Easton Star Democrat, July 30, 1980]

TOURING THE BAY

(By Gene Bisbee)

A fact-finding tour of the Chesapeake Bay region revealed few facts but one major impression for Sen. Charles McC. Mathias: those seeking solutions to the bay's problems still haven't coordinated their work.

Maryland's Republican senator has adopted the bay, and spent Monday among its Eastern Shore farms and watermen's villages and yesterday in the halls of state office buildings in Annapolis.

He was seeking ammunition and information for tomorrow's hearings on his bill by the Senate Committee on Governmental Affairs.

"A crab is hatched in Virginia waters and travels north into Maryland as it grows older," Mathias explained. "The crab doesn't know he has crossed a political boundary. The bay is a unit, and it should be looked at that way."

The coordination of bay research and laws had become as tired a refrain in recent years as the bay is dying. But both are true. Even though Maryland and Virginia natural resources bureaucrats and lawmakers are now meeting regularly, there's still a need for improvement.

"We're in better shape now in relations, but we still don't have the cooperation," Mathias said.

L. Eugene Cronin, head of the Chesapeake Research Consortium, located in Annapolis, said he supports Mathias' bill because it would coordinate federally supported research and set up an information clearinghouse to "make it easy to find out what's going on."

The coordination would be done by a board of both state and federal experts.

Although charges are constantly leveled about wasteful duplication of effort, Cronin disagrees. "The problem is that we leave cracks in the research," Cronin said. The information clearinghouse would help fill those cracks.

While touting coordination, the researchers who talked to Mathias yesterday also asked for more funds.

Sam Martin, head of the water quality division of the Ballitmore Regional Planning Council, said that lower federal funding of many research projects could slow down the momentum of cleaning up the Chesapeake Bay.

Martin's group is looking for the link between land and water pollution. He noted that the seemingly insignificant stormwater runoff from shopping center parking lots could increase lead levels in streams. The lead is being absorbed by the fish, and no agency has determined how much lead is too much for fish.

More studies are needed to ensure that regulations for developers to follow on land actually help the bay. In certain management programs, Martin said, "we're shooting in the dark."

Mathias said that Congress is always very reluctant to appropriate planning money, even though thousands of dollars could be saved "to see how things interact with each other," he said.

Del. Gerald Winegrad, D-Annapolis, told Mathias that Maryland has "great" laws to regulate pollution of the bay, but the commitment is being eroded by budget constraints. "We need help at the federal level," he said.

The senator and his staff also took a ride on the *Ridgely Warfield*, a research vessel for Johns Hopkins University that is currently involved in the U.S. Environmental Protection Agency's Chesapeake Bay Program.

An afternoon session with two citizen's committees was not attended by Mathias, who had to go to Washington for a hearing on the Billy Carter affair. Another meeting with educators at the Smithsonian's Chesapeake Bay Center for Environmental Studies in Edgewater was canceled.

[From the Easton Star Democrat, July 30, 1980]

MATHIAS WARNS RESTORING BAY WILL BE COSTLY

(By Jack Bowie)

ANNAPOLIS.—Sen. Charles Mathias (R-Md.) ended a two-day tour of Chesapeake Bay Tuesday, warning that greater effort and more money are needed to save the Bay from pollution.

Mathias said federal and state agencies have made "visible progress" in the war to keep the Bay alive and reverse a long-term trend toward degradation.

But he warned that an expected doubling in Bay-area population by the year 2020 and increased pressures for development will require a new "sense of citizen responsibility" if the fight is to be continued successfully.

"It's a little like Satchell Paige, who said don't look back, they might be gaining," he told reporters at the Annapolis City Dock. "We are gathering the forces to do the problem, but we haven't done it yet."

Meanwhile, scientists involved in a five-year, $25 million Bay study, want more time and money to complete their work before recommending various different management techniques aimed at solving the Bay's problems.

Tudor Davies, director of the Environmental Protection Agency's Chesapeake Bay Program, said it would take "at least another year" and perhaps $2 million to develop the alternatives following the study's scheduled end next year.

Davies said the extension "would permit us to develop alternatives, so we could say if we do this, this is what the consequence is. And if we do that, that is what the consequence is."

The alternatives would provide elected officials with bases on which to make decision about how the Bay should be used, Davies said. Otherwise, he said, the study could not be used as effectively.

Mathias announced his findings at a press conference before departing on an hour-long cruise aboard the research vessel Ridgeley Warfield to watch crewmen retrieve a Bay Program current meter.

He later canceled a meeting with Bay educators and met with representatives of citizens advisory groups only briefly to attend a hastily called meeting in Washington of the committee investigating Billy Carter.

Neither Mathias nor the researchers involved in the study was willing to say what will have to be done to reverse a steady decline in the Bay's water quality and in populations of finfish, shellfish and ducks.

Nor were they willing to guess how much it would cost.

Those predictions can be made only after the Bay Program is completed, Davies said.

Nevertheless, Mathias said the effort will take a greater degree of "discipline" and public commitment than any shown so far.

"On an elementary level, it means you don't know your old tin cans and garbage in the Bay. But beyond that, people living in communities have got to insist that their municipalities—not their governor or their Congress or their president—have an adequate sewer system. It's going to take a sense of citizen responsibility not only about throwing household trash and garbage but about community facilities."

It also will require a new sense of understanding about the Bay's value as a source of food, jobs, recreation and aesthetics, he said.

"Unless there is a deep sense of public appreciation for one these factors—you don't have to appreciate all of them—I doubt you can maintain the public support because it's going to cost something. Let's not kid ourselves. It's going to cost money," he said.

Davies said the effort probably will involve major changes in practices related to development, waste disposal and agriculture and require "trade-offs between environmental quality and what we can afford."

He said he was optimistic that the effort can succeed and pointed to the "success story" of the Potomatic River as an example.

"It will take a public choice to say we're going to do it,," he said.

Mathias's tour, which began Monday at the Horn Point environmental lab in Cambridge, included meetings with farmers, watermen, scientists, land planners, regulatory agencies and local elected officials. They discussed the Bay's declining condition and their efforts to improve water quality.

It also focused on the five-year study program, which is scheduled to conclude in 1981 but which the researchers, and Mathias, want extended to complete current projects.

Others want even more work, especially in areas not included in the study, which focused on three major problems: the disappearance of the Bay's submerged aquatic grasses and the problems posed by the overintroduction of nutrients, such as fertilizer from farm fields, and toxic chemicals, such as chlorine, which is used in wastewater treatment processes.

James E. Gutman, chairman of the state's Water Quality Advisory Committee, proposed a "phase two" study of the seven problem areas not selected for study four years ago.

"The Bay Program has been a very successful effort. Certainly we all wanted a lot more out of it. But the way to make it even more successful is to have a part two," he said.

The areas include problems associated with erosion, shellfish bed closures, dredging, recreational boating, commercial fishing and hydraulic and fisheries modifications.

Ray Walton, a Bay Program researcher developing a computer-type Bay model, said Congress also should continue funding the Chesapeake Bay Hydraulic Model at Matapeake. Walton said his computer model, which will simulate the Bay through a series of mathematical formulas and data, will be better than the physical one but won't get obsolete.

In addition, Congress also should pass legislation, introduced by Mathias and Rep. Robert E. Bauman (R-Md.) to coordinate federally funded Bay research, Cronin said.

Cronin has previously expressed misgivings about the bill, saying it could stifle creative research and slow down the clean-up effort. He repeated those fears Tuesday, saying he is less concerned about duplication than in "missing things we need to know."

Nevertheless, Cronin said, the Chesapeake Bay Consortium, which represents most of the Bay's scientists, supports the bill as "a constructive step."

Among other things, the bill will create a central repository or computer bank for Bay research and enable researchers to disperse new information more quickly, Cronin said.

Senators Mathias. We will take another brief recess now.

[Recess taken.]

Senator Mathias. The committee will come to order.

Let me propose a slightly unorthodox procedure here. We are locked in a bitter debate on the floor. We have now voted four times on the same issue on nuclear storage, with the results swinging back and forth by about one vote each time.

Do you have a written statement?

TESTIMONY OF GERALD D. SEINWILL, DEPUTY DIRECTOR, WATER RESOURCES COUNCIL

Mr. SEINWILL. Yes; I do, Mr. Chairman.

Senator MATHIAS. We will accept it fully for the record following your testimony.

Mr. McGrath, you have a statement also which we will accept for the record. We will ask each of you to summarize your statement briefly.

I am very unhappy about keeping you waiting while I run back and forth. So, please summarize your statement.

Mr. Seinwill, please proceed.

Mr. SEINWILL. Thank you, Mr. Chairman.

In the statement we have tried to point out some of the opportunities that a Title II River Basin Commission, organized under the Water Resources Planning Act might provide for the Chesapeake Bay and for the greater region tributary to the Chesapeake Bay.

The biggest difference between a Title II River Basin Commission and the research coordination proposal that is before you is that a commission does go beyond the research effort and attempts to come up with a plan to find the best alternatives for the use, management, and control of the total water and related land resource of a basin.

It attempts to take the second step. The research identifies the needs but does not necessarily propose solutions. A Title II Commission, by its continuing planning process, attempts to come up with a plan and continues to modify it. Such a plan can be used to implement research results and solve the problems. It does this by forming or forcing a consensus of the Federal, State, and local members of that Commission.

Senator MATHIAS. Of course I earlier indicated interest in the Title II Commission. I liked the idea of forum where the Federal and State agencies could all sit around the same table, an advanced forum of Dr. Cronin's Chowder and Marching Society.

It took certain initiatives from the State, which obviously were not forthcoming.

Mr. SEINWILL. Yes, sir. We have six commissions and in every case they were formed at the urging of the States in those basins.

One of the concerns we often hear about the commissions is that they are dominated by Federal members. Unfortunately we have many more Federal agencies than States in most basins.

Each of the existing commissions does operate by consensus rule. So, until all the State and Federal members are satisfied with the plan or the series of priorities, it does not move forward.

Senator MATHIAS. So even under a Title II Commission there would not be a chance that one side or the other could dominate?

Mr. SEINWILL. There does not need to be. Certainly changing times can influence that. But most of the commissions have adopted bylaws to prevent that very thing from happening.

Senator **Mathias**. If I could turn just a minute to Mr. McGrath, we will then have some questions for each of you.

Mr. McGrath, please summarize your statement very quickly.

TESTIMONY OF DAVID B. McGRATH, DIRECTOR, CHESAPEAKE BAY FOUNDATION

Mr. **McGrath**. Thank you, Mr. Chairman.

I would like to submit my statement.

Senator **Mathias**. Without objection, it will appear in the record in its entirety at the conclusion of your testimony.

Mr. **McGrath**. We are aware there is room for improvement in the coordination of research on the bay. We are also aware that coordination should work not only to avoid duplication of effort, but to assure that appropriate and essential research and observation needs are not omitted.

In our experience this latter problem may be a lot more serious than the problem with duplication.

For example, there is no integrated baywide ongoing program to monitor water quality and ecological parameters on the bay. There are many individual and partial monitoring programs covering different parts of the bay by differing means and methodology.

But these do not comprise the unified monitoring system. When you consider the amount of funds that have been spent and the scientific establishment that has been created to cover the bay's research needs, this seems to be a very serious omission indeed.

Doubtless the different research institutions have been able to overcome many of the difficulties that have resulted from the lack of integrated overall monitoring of data management.

But it is equally doubtless that such is a poor substitute for a unified monitoring program.

So, we would hope that in some way the legislation which we are considering could help rectify the situation. What I am talking about here basically is something that comes actually before the unified data bank idea. It is the collection of baseline and monitoring data through observation and sample taking throughout the whole bay. It is not scientifically very sexy and it is very difficult to get long-term legislation to fund it.

But we believe, and I think the research organizations that we deal with, would second that belief that such a system is absolutely essential and it does not exist at the present time.

Dr. Cronin pointed out that there already exists an overall research plan for the bay. We think that any new planning effort should begin with a very careful review of this existing plan, and should bear in mind in its own work the question of duplication in this basic effort.

It would seem to us that the existing plan has already been on the record for a considerable period of time. It may be that it will suffice perfectly well in its present form or with minor changes.

This would certainly be preferable to an exhaustive new effort starting from scratch to construct a completely new and essentially different program.

Senator **Mathias**. It seems like research by its very nature builds on the research that has gone before it. The human race accumulates layers of information as it gains more and more knowledge.

What you suggest is patently the thing to do and really the only thing you can do: Build on what has been done so far.

Mr. **McGrath**. Yes; that is just in a nutshell what the situation is.

We have some trouble with section 4 of H.R. 4417, subparagraph 2 of paragraph (c) on page 6 of the act, and particularly with the opening phrase: "To establish an effective mechanism for coordination."

Perhaps we are putting too much emphasis on a single word here. We find that the term "mechanism" is somewhat ambiguous. It might be interpreted too literally and tend to result in a system of rigid control, which I think we are all trying to get away from.

We suggested some such language as, for instance: "To promote optimum utilization of available funds and resources to benefit the bay area."

Finally, I think I can summarize by recommending adoption of the House bill, H.R. 4417, with the modifications that have already been suggested, rather than the Senate version.

Our reasons for this are very similar to Dr. Cronin's. We feel that the provisions contained in section 4(c) of Senate bill 1316, which are on page 8 of the Senate bill, authorizing the office to consider and make substantive recommendations on management of bay resources in our view, the office is not organized or staffed to do this.

We think it may be a mistake under these circumstances to add yet another voice attempting to deal with management problems directly to those that already exist.

We feel that the Chesapeake Bay Commission itself should be the primary focus of this kind of joint overall management.

Thank you, Senator. That is all.

Senator **Mathias**. Thank you very much.

Let me revert to the subject of the Title II Commission for a minute. What binding authority would the plans that are recommended by Title II Commission have on the States?

That is a very sensitive question in both Maryland and Virginia. If anything, I think it is a little more sensitive among Virginians than Marylanders because they took us to the cleaners back in 1785 and they know what can happen.

We suffered from that. They seem to be more sensitive than we are because they did it to us.

Mr. **Seinwill**. The plans of the commissions are not binding as such. At the present time either the State or the Federal members——

Senator **Mathias**. The bell is ringing again.

Let me suggest, so we can make maximum use of your time, rather than recessing at this time, if you would continue to give us the answer for the record.

I ask you and I ask the same question of Mr. McGrath to respond verbally to questions which I might ask Marian Morris of the staff to propound.

Or, would you rather have us submit them to you in writing and have the answers returned to us?

Mr. **Seinwill**. I would be happy to have them in writing. I think we could do it much more efficiently that way.

Senator **Mathias**. How about you, Mr. McGrath?

Mr. **McGrath**. That is perfectly acceptable with me. Or we could do it the other way.

Senator **Mathias**. When we finish the answer to this question, we will propound questions to you in writing. We will hold the record open for 10 days to give you an opportunity to prepare your responses. Then we do not have to waste more of your time here.

Mr. **Seinwill**. That is fine.

Mr. **McGrath**. That is fine with us.

Senator **Mathias**. Without objection, so ordered.

Mr. **Seinwill**. To go back to the question: Do the plans bind the members of the commission? At the present time the plans do not bind them in any way. The plans are adopted only with the full concurrence of all the State and Federal members.

For certain construction activities, the three major construction agencies, the Army Corps of Engineers, the Water and Power Resources Service, and the Department of Agriculture, have, through the Council, agreed that they will carry out their projects and programs only when they are not in conflict with an approved regional river basin plan.

So, there is a start of being consistent with the plan. We are working to make that more effective patterned somewhat after the coastal zone consistency provisions.

Senator **Mathias**. I am sorry the events this morning have taken the course that they have, which has precluded fuller discussions.

But I will propound questions in writing. We will ask your help in getting responses in within 10 days.

I want to insert in the record several letters. One is from the Governor of Maryland and one is from the Governor of Virginia. One is from J. Harry Michael, Jr., from the Senate in Virginia. One is from Secretary Coulter, the Maryland Department of Natural Resources. One is from Secretary Rowe of Virginia.

There are several other documents which will be included at the end of the hearing record.

Without objection, those will be inserted in the record.

[The letters referred to follow:]

STATE OF MARYLAND
EXECUTIVE DEPARTMENT
ANNAPOLIS, MARYLAND 21404

HARRY HUGHES
GOVERNOR

1980 JUL 30 PM 2 05

July 28, 1980

The Honorable Charles McC. Mathias, Jr.
United States Senate
Suite 358
Russell Senate Office Building
Washington, D. C. 20510

Dear Senator Mathias:

Thank you for your letter of July 10, 1980. Deputy Secretary Louis N. Phipps, Jr. of the Maryland Department of Natural Resources will provide Maryland's testimony. The legislation as set forth in H.R. 4417 is important to Maryland. I believe Secretary Coulter and Secretary Rowe of the Virginia Department of Commerce and Resources have recently communicated to you the joint position of both States on H.R. 4417.

We will be most appreciative if S. 1316 can be amended to follow verbatim the language of H.R. 4417 as that act passed the House of Representatives. Please let me know if I can be of further assistance.

Sincerely,

Harry Hughes
Governor

1980 JUL 30 AM 10 25

COMMONWEALTH of VIRGINIA

Office of the Governor

Richmond 23219

John N. Dalton
Governor

July 28, 1980

The Honorable Charles McC. Mathias, Jr.
United States Senate
Washington, D. C. 20510

Dear Senator Mathias:

Thank you for inviting testimony on S. 1316 and H. R. 4417, the Chesapeake Bay Research Coordination Act.

As you know, Virginia and Maryland have been working together closely on this bill. We submitted a joint statement to Congressman Bauman in February of this year. Most of the changes we recommended to H. R. 4417 were made. We are pleased now to support H. R. 4417 as it passed the House on May 19. I will have a representative at the hearing next week to offer testimony in conjunction with Maryland representatives.

Please be assured that we will do all we can to help ensure coordination of Bay research.

With all good wishes, I am

Very truly yours,

John N. Dalton

John N. Dalton

JND:cfc

cc: Maurice B. Rowe
Susan L. Aheron
Charles A. Christophersen
Donald W. Budlong

COMMONWEALTH OF VIRGINIA

SENATE

J. HARRY MICHAEL, JR.
25TH SENATORIAL DISTRICT
ALBEMARLE, FLUVANNA, GREENE,
NELSON AND ORANGE COUNTIES,
CITY OF CHARLOTTESVILLE
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COMMITTEE ASSIGNMENTS:
COMMERCE AND LABOR
COURTS OF JUSTICE
EDUCATION AND HEALTH
FINANCE
RULES

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July 3, 1979

The Honorable Charles McC. Mathias, Jr.
Senate of the United States
Washington, D.C. 20510

Dear Senator Mathias:

Thank you very much for your recent memorandum, sending on a copy of S. 1316.

I read this with a great deal of interest, and am deeply gratified that some effort is being made at coordination of the work going on in connection with the Chesapeake Bay and its environs.

As chairman of Virginia's Commission on Interstate Cooperation, I have had our staff trying to identify all of the studies, all of the agencies, and all of the private entities working in this field. When we reached something on the order of twenty-odd agencies, I was tempted to quit. It is obvious that coordination is strongly needed for this whole area of problems.

For Virginia's Commission on Interstate Cooperation, and for myself, I send on a hearty congratulations to you for initiating this process. If we can help, please let us know.

Cordially,

J. Harry Michael, Jr.
J. Harry Michael, Jr.

JHMjr/jdn

JAMES B. COULTER
SECRETARY

1980 JUL 23 PM 2 30

STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
TAWES STATE OFFICE BUILDING
ANNAPOLIS 21401
(301) 269-3041

LOUIS N. PHIPPS, JR.
DEPUTY SECRETARY

July 14, 1980

The Honorable Charles McC. Mathias, Jr.
U.S. Senate
Suite 358, Russell Senate Office Building
Washington, DC 20510

Dear Senator Mathias:

We are writing with regards to H.R. 4417, the Chesapeake Bay Coordination Act, recently passed by the House. We believe the Act, if enacted and implemented, can contribute materially to the proper management of research on the Bay System. To this end, the State of Maryland and the Commonwealth of Virginia have joined together in support of H.R. 4417. A joint position paper prepared by both States has been published in the Congressional Proceeding: Serial No. 96-29 printed for the Committee on Merchant Marine and Fisheries. A copy is enclosed for easy reference.

We are aware that the Senate has a crowded legislative calender because of the recesses in the month of July and August. However, it would not be in the best interests of the Chesapeake Bay to fail to bring this measure to the consideration of the Senate before the end of the 96th Congress. Therefore, we are requesting you to use your influence to bring H.R. 4417 to the attention of the Senate of the 96th Congress.

Thanking you in advance for your interests and efforts on this legislation. Please let us know if we may help in any way.

Sincerely,

Maurice B. Rowe
Maurice B. Rowe
Secretary of Commerce & Resources
Commonwealth of Virginia

James B. Coulter
James B. Coulter
Secretary of Natural Resources
State of Maryland

JBC:LEZ:kme

JAMES B. COULTER
SECRETARY

STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
TAWES STATE OFFICE BUILDING
ANNAPOLIS 21401

LOUIS N. PHIPPS, JR.
DEPUTY SECRETARY

(301) 269-3041

July 23, 1980

The Honorable Charles McC. Mathias
United States Senate
Suite 358
Russell Senate Office Building
Washintgon, D.C. 20510

Dear Senator Mathias:

Maryland and Virginia agree on the need for coordination of research on Chesapeake Bay. We are therefore pleased to see that S. 1316, the Chesapeake Bay Research Coordination Act of 1979, has come before the Senate, and hope that the Senate will be able to act on it during this session.

Our two states had developed a joint position paper on H.R. 4417 when that bill was introduced in the House of Representatives. We have recently transmitted a copy of this paper to you. Since S. 1316 appears to be identical to the original version of H.R. 4417 upon which this position was based, we ask that you enter this position paper as part of the record on S. 1316. We have worked with the sponsors of H.R. 4417 to amend that bill to address concerns of our states, our citizen advisory groups, and the scientific community. We are pleased with the outcome of that effort, and therefore suggest that your committee consider amending S. 1316 to follow verbatim the language of H.R. 4417 as that act passed the House of Representatives.

We would offer our support for the bill if such amendments are made. Both Virginia and Maryland stand ready to work together with the federal government to make this act work, and to ensure that the maximum benefit from research conducted on Chesapeake Bay is obtained.

Sincerely,

Maurice B. Rowe
Maurice B. Rowe
Secretary of Commerce & Resources
Commonwealth of Virginia

James B. Coulter
James B. Coulter
Secretary of Natural Resources
State of Maryland

JBC/LEZ/ras

Senator Mathias. I am grateful to all of you for being here. I might ask Mr. McGrath one question.

If he were a one-man legislature, would he go the title II route? That may not be the option.

Mr. McGrath. I must confess to knowledge among my colleagues there is doubt as to whether this legislation is the right way to go.

I, myself, do not have the depth in research in the bay to argue forcefully on the subject. But in the final analysis I have to be aware that somehow research on the bay has failed to come up with an integrated bay wide system.

I am not sure this is all the problem of the research agencies doing the work. I suspect it is a legislative problem just as much and perhaps more.

Let me change that to say that the organizations that are responsible, including the legislative organizations of the two major States and the Federal Government have failed to come up with a program that is really rational and unified, that is, rationally unified for the whole bay.

The point that I made earlier about one particular example is one that the foundation feels particularly strongly about. A monitoring system that would start with baseline data and continue over a necessarily long period of time collecting data, using standard methodology and agreed parameters which all the research organizations can use without modification and without having to convert or without having to do all the things that they do now, is what I am referring to.

The data bank and all the other aspects of the unified system follow.

Although it seems to me that this legislation does not deal directly with those problems, it may get led more forcefully in their direction.

Senator Mathias. A step in that direction?

Mr. McGrath. Yes.

Senator Mathias. I think we have to be perfectly frank about this. There not only has been a lack of coordination and cooperation, but within living memory Dr. Hargis and I can remember when Virginia and Maryland were actually shooting at each other over marine questions, shooting with the intent to harm or to kill.

This was not just some quaint tribal custom. This was a bitter dispute. Happily the oyster wars are only a memory. I hope they never recur.

The rivalry has been very real ever since Clayburn's war in the 17th century. So we are resolving questions that have been troublesome for many generations of Marylanders and Virginians.

I think you come to the conclusion that I do, that perhaps in the best of all worlds you want something different and better. But you have to make what progress you can. That is my own sense of it. Am I right in reading you that way?

Mr. McGrath. Yes.

Senator Mathias. I thank everyone who has participated here today. We look forward to getting both of your answers.

[The prepared statement of Mr. Seinwill and Mr. McGrath, and responses to written questions follow:]

PREPARED STATEMENT OF GERALD D. SEINWILL, DEPUTY DIRECTOR
U.S. WATER RESOURCES COUNCIL

TITLE II RIVER BASIN COMMISSIONS
AND A POTENTIAL CHESAPEAKE BAY BASIN COMMISSION

Mr. Chairman and Members of the Committee: Thank you for asking the Water Resources Council to testify on proposed legislation for Chesapeake Bay research coordination. As you know, the Council assists interstate entities in developing regional plans and in resolving conflicts between and among States and Federal agencies. Because of our concern for the Chesapeake, I would like to acquaint the Committee with Title II river basin commissions which might present an alternative for coordinating Chesapeake Bay research and for utilizing research results through the development and implementation of a regional plan.

Creation of a Commission

First, I should note that establishment of a Title II commission can be done under existing legislature. Title II of the Water Resources Planning Act of 1965 (P.L. 89-80) as amended authorizes the President to declare the establishment of a "river basin water and related land resources commission" by executive order upon request of either the Water Resources Council or a State.

The request must define the area, river basin, or group of related river basins for which a commission is requested. Such a request, if it comes from a State, must be in writing from the Governor of the State or in such a manner as State law may provide, and must be concurred in by the Water Resources Council and by not less than one half of the States in which the basin or basins are located.

There are, of course, important details which the parties involved must agree upon before such a request is made for establishment of a river basin commission. The area to be encompassed by the commission, voting rights of the members, funding agreements between the States, and recommendations on which Federal agencies should be included as members in the commission need to be agreed to by the States and other potential members.

Membership

A Title II river basin commission is a partnership (some members call it a hybrid institution) composed of States, Federal agencies and other regional organizations. It has a Federal chairman, appointed by the President, whose salary is paid by the Federal Government. The chairman serves as the chairman and coordinating officer of the Federal members of the commission and represents the Federal Government in Federal-State relations on the commission. The State members elect a vice chairman who serves as coordinating officer of the State membership and represents the State government in Federal-State relations. The President designates which Federal agencies have a substantial interest in the work to be undertaken, and one member is appointed by the head of each of these agencies to represent that portion of the Federal interest. An additional member is appointed by any interstate compact commission or other interstate entity, whose jurisdiction extends to the waters of the area for which the commission is created.

If the interested States were to request formation of a Chesapeake Bay Basin Commission, a member from the Susquehanna River Basin Commission and perhaps from the Delaware Basin Commission (both of which are compact commissions and, therefore, not formed under Title II of P.L. 89-80), as well as a representative of the Potomac River Basin Advisory Commission would be members of, or observers to, a Chesapeake Bay Basin Commission.

Funding

The operation and maintenance budgets of the river basin commissions are funded at a 2.5/1 Federal/State ratio. Funds must be cash, not in-kind. These funds support ongoing plan development, integration of research data, analysis of tradeoffs, and implementation studies for the region. The Level B study program with a match of 75/25 provides special study funds for development of strategies, policies and programs that provide a basis for detailed studies and actions leading to implementation of Federal, State and local governments programs or projects.

Statutory Role and Duties of a Commission

The statutory role and duties of a commission are:

1. to serve as the principal agency for the coordination of Federal, State, interstate, local and non-governmental plans for the use, development, and conservation of the water and related land

resources in its area;

2. to prepare and keep up-to-date a comprehensive, coordinated, joint plan for Federal, State, interstate, local, and non-governmental development of water and related land resources, including an evaluation of all reasonable alternative means of achieving optimum development of water and related land resources and recommendations with respect to individual projects;
3. to recommend long-range schedules of priorities for collection and analysis of basic data and for investigation, planning, and construction of projects, and;
4. to foster and undertake studies necessary in the preparation of the plan. A river basin commission may also engage in other activities, studies and investigations which are necessary to carry out the program and to accomplish the commission's goals.

These latter two functions would seem particularly useful in the Chesapeake.

Function of the Title II River Basin Commissions

Since the passage of the Water Resources Planning Act in 1965, six river basin commissions have been formed covering basins in 32 States. These six Title II river basin commissions have achieved a degree of planning coordination among governmental and non-governmental entities much greater than existed before the commissions were organized. They submit annual priorities reports to WRC which will assist in guiding Federal investments for their areas. The commissions coordinate studies, exchange research information, and integrate information from planning program which have interstate impacts. Each commission also develops an ongoing regional plan. Plans are not locked into one timeframe but are responsive to changing conditions and policies including planning and program inputs from all levels of governments as well as from non-governmental entities. Each commission, however, reflects the regional and institutional concerns of the States in their region; in consequence, they are not all alike, and do not have identical bylaws or organizational structure.

Each commission does have an experienced staff that can be readily used to organize and provide for all types of comprehensive planning activities. In looking at interstate issues, these technical capabilities can be most effective in eliminating duplication and resolving conflicts among and between Federal and State agencies.

A good example of resolution of interagency conflicts is provided by the Interim Plan for Disposal of Dredged Material from Long Island Sound, developed by the New England River Basins Commission. This plan, based on research done by a number of agencies, recommends open water disposal of dredged material from Long Island Sound and is acceptable to Connecticut, New York, and Federal and interstate agencies. In a similar example, the Great Lakes Basin Commission organized a work group of Federal and State agencies that established strategies for reducing shoreline damages through proper land use, zoning, structural protection, and other activities.

Great Lakes Basin Commission also developed a program for coordinating both research information and research vessels used in the Great Lakes which resulted in greater efficiency and reduced costs.

Potential Chesapeake Bay Basin Commission

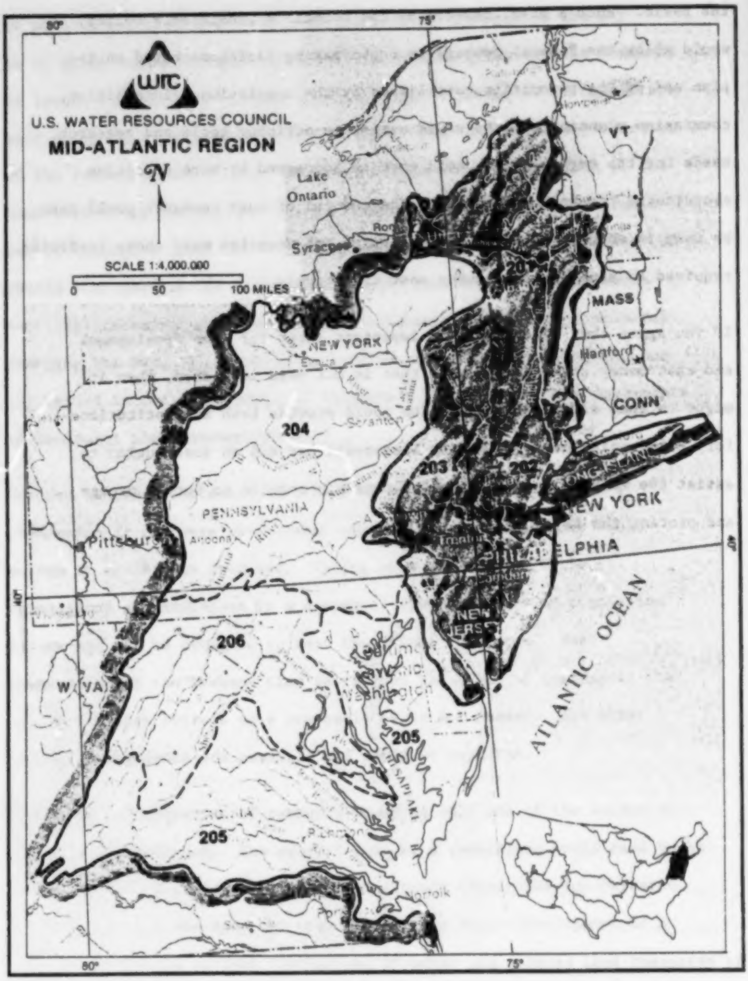
The Office for Chesapeake Bay Research Coordination proposed in the legislation under consideration involves only the States of Virginia and Maryland (the area immediately around the Bay). In the other regions where river basin commissions are presently in existence, they include as members all the States in the hydrologic region or drainage area; the hydrologic region of the Chesapeake Bay includes portions of West Virginia, Pennsylvania, and Delaware as well as Virginia, the District of Columbia and Maryland. Were all of the States of the hydrologic region included in a commission, the commission could address upstream/downstream problems that are important in controlling the quantity and quality of the bay inflows. Where only two of the downstream States of the region involved in the commission or coordination office, the upstream could not be bound by resource management decisions that result from planning and research done by the commission. (By way of a footnote, only Virginia is not a member of the Susquehanna River Basin Commission and the Susquehanna and the Potomac are both major upstream contributors to the Bay. Were this compact commission expended to include all the area in Virginia and Maryland draining into the Bay, each of the member States and the Congress would have to modify the existing compact through legislation.)

It must be stressed that while coordination of research on the Bay is of great importance and the amount of funding given to this research is large, the ultimate purpose of this research should be to facilitate good management decisions which will allow long-term use and protection of the resources of the Bay. For this reason the deliberations of the Committee on an institution to effectively coordinate research should not be limited to just the initial research or data gathering phase but should also provide for a future expansion into an institution which can: (1) recommend the best possible alternative management tools for managing the Bay, (2) establish priorities for Federal investment, and (3) assist in the development of interstate and Federal-State agreements to implement plan recommendations.

Concern has been expressed that Federal agencies could dominate a commission if one were established since the Federal agencies would outnumber the States involved. Voting arrangements for Title II commissions are addressed in a number of different ways in commission bylaws and can be designed to meet the States' concerns. Most commissions at the present time operate on the basis of consensus; that is, if a member objects to a proposal, it is not passed. But other voting arrangements are possible and could be explored.

Obviously, coordination of research would be only one of the duties of a Title II commission. The overall goal of a commission would need to be much broader. A commission created to provide Chesapeake Bay research coordination for the next few years could also begin development of a plan for achieving optimum development of water and related land resources of the basin. Such a plan, covered by the Council's Consistency Policy, would allow the Federal members to begin making decisions based on the plan and on the priorities established by the commission. In addition, commission planning efforts would assist in defining goals and research needs for the region which could then be addressed by more effective coordinated research activities. The results of such research could then be used in turn to help the member States and agencies make those tradeoffs required to manage the resource most effectively.

If you agree that research is an important input for plan development and that money spent on research that is not used is wasted, then it might be that a Title II commission could provide both an institution for coordinating research on the Chesapeake Bay and an institution to assist the members in making use of research results to better manage and protect the Bay.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Questions With Answers From Water Resources Council

Question. What is the annual cost for each of the Title II Commissions? How many Commissions are there and in which water basins?

Answer. There are six Title II River Basin Commissions. Each commission receives $60,000 of Federal funds for a chairman and the chairman's expenses. In addition, the following table lists the Federal portion of the FF 1980 operating costs for each commission. These costs include administrative costs and the costs of their comprehensive, coordinated, joint planning (CCJP) efforts. The Federal portion is matched 2.5/1 by the States.

New England River Basins Commission:	
Administration	$49,000
CCJP	396,000
Pacific Northwest River Basins Commission:	
Administration	35,000
CCJP	300,000
Great Lakes Basin Commission:	
Administration	50,000
CCJP	495,000
Ohio River Basin Commission:	
Administration	65,000
CCJP	420,000
Upper Mississippi River Basin Commission:	
Administration	62,000
CCJP	354,000
Missouri River Basin Commission:	
Administration	50,000
CCJP	498,000

Question. How long have they been in existence?

Answer.

Pacific Northwest River Basins Commission—March 6, 1967.
New England River Basin Commission—September 6, 1967.
Ohio River Basin Commission—January 13, 1971.
Great Lakes Basin Commission—February 8, 1972.
Missouri River Basin Commission— March 22, 1972.
Upper Mississippi River Basin Commission—March 22, 1972.

Question. Your statement notes that the hydrologic region for the Chesapeake Bay includes portions of the States of West Virginia, Pennsylvania, New York and Delaware, as well as Maryland and Virginia. So, if a Title II commission were to be formed for Chesapeake Bay, presumably the Water Resources Council would insist on the inclusion of these other States?

Answer. No. It would be possible for the commission to be established with only the two lower States and the District of Columbia as members. However, representation of the upper States, through the Susquehanna River Basin Commission or through direct representation by the States, would be advisable if the commission is to analyze and attempt to resolve some of the upstream/downstream issues.

Question. In establishing a Title II Commission, must each State involved in the hydologic region request designation of the region? What does "concurred in" mean when you describe the role of other States in the request for Title II designation?

Answer. The law requires that at least one State request designation and that one-half of the States concur. Concurrence means receiving letters signed by at least one-half of the Governors of the States involved stating each State's concurrence.

Question. As you noted in your testimony, Title II commissions have much broader goals than research coordination, namely, planning for optimum development of land and water resources in the region. (a) How far along the existing Title II Commissions in the development of those plans? (b) What binding authority do those plans have on affected State or local governments? Must the plan be ratified or incorporated in State or local land-use or comprehensive plans?

Answer. (a) Each commission has submitted portions of their comprehensive, coordinated, joint plan to the Council for review and subsequent transmittal to the President. However, planning is an ongoing process. New information is developed; new laws are enacted; new needs are determined; portions of the plans are implemented; and the plans, developed as guides to action, require updating for each major tributary as these conditions change. Each commission has completed major portions of their plan but because of the ongoing nature of planning and plan implementation, these plans and the priorities assigned to programs, studies and projects require frequent reassessment.

(b) The plans, prepared under Title II of the P.L. 89-80, are not binding on any State or local government. (Interstate compact commission plans are binding under specified conditions and would have to be considered separately.) Plans do not need to be ratified by or incorporated into State or local land-use or comprehensive plans but there is no doubt that a number of States have drawn upon information and analysis done by the RBC's and on the plan's priorities in developing their own State plans. Some Federal agencies, under a Council agreement of January 1979, are required to certify that their proposed actions are not in conflict with approved regional plans. Corps of Engineers, Water and Power Resources Service, and some Soil Conservation Service programs and projects are covered by this consistency provision. There is a proposal presently before the Council to expand this consistency provision to include a number of additional Federal programs and projects which would have a positive effect upon the usefulness of the plans for Federal budgeting decisions. This, in turn, might influence the States to consider adopting their own consistency requirements.

Question. What research coordination mechanisms are in place in other river basin regions to prioritize research, build on existing research, and avoid duplication?

Answer. In developing the CCJP, each commission draws on past and ongoing research from budgeting throughout the region and develops coordination through meetings, seminars and information exchange with researchers at institutions within the region. In addition, commissions also undertake special studies, which include some research components (field data collection) under the Council's Level B studies program which provides funding for special planning efforts. For example, three such special studies ongoing at the present time are the Columbia Estuary Study, the Delaware Groundwater Study and the Upper Mississippi Master Plan.

Prioritization: In order to qualify for study funds, planning entities present study proposals and rank them. They also rank, as part of their annual regional priority setting process, Federal (and State) implementing programs and projects—some of which are research programs. Commissions do not normally review *all* independent research projects, although they may keep a close eye on the A-95 proposals in order to comment when necessary on duplication or on need for these proposals relevant to commission programs and priorities. This role could be easily capitalized on if that were one of the primary interests of a commission.

Question. Would you describe the number and type of research firms, institutions of learning, public interest groups involved in research in other Title II regions. Would you estimate the volume of Federal research dollars flowing into those entities annually?

Answer. Some research institutions have contracted directly within commissions under the special studies program. By far the largest part of research money in each region is independent of the commission programs. The information produced may be *used* by the commission but the programs are not *funded* by or through the commissions. Therefore, the Council has no answer as to the total funding for water related research or the numbers of research institutions or public research oriented programs being funded in each region. In the past, the focus of Title II programs has been plan development utilizing research as an input rather than as a focal point.

Question. What types of water quality problems or other pressures are of the most importance and being addressed by other Title II Commissions?

Answer. Phosphate levels have been of immense concern and therefore of high priority for research in the Great Lakes region. Rates of sedimentation in all the regions; toxics in the Great Lakes, New England and the Delaware; energy demands, agriculture use, and fisheries protection in the Pacific Northwest; transportation demands on the Mississippi; and flow rates, conjunctive use, and groundwater contamination in the Delaware have all received high priority. Water quality issues are of concern in all of the basins.

Question. In the case of Chesapeake Bay, the EPA Bay Program has identified three high priority areas for research:

(1) the decline of Bay grasses (submerged aquatic vegetation)

(2) toxics and their impact on water quality

(3) nutrient enrichment (eutrophication)

And lastly, the program is looking into options for improved Bay management. I'm wondering whether those same areas of concern also prevail in other water basin regions.

Answer. Yes. Very similar issues dominate the commission studies, especially in those with estuarine waters.

Question. Comments from several other witnesses on the Chesapeake Bay Research Coordination Act have expressed concern about the use of the word "research plan"; that it implies a control of Bay research which might have the effect of discouraging or ending certain areas of Bay research. Other concern has been expressed about the prospect of review of individual research "projects", of which there are many, rather than an overall area of research inquiry and its relationship to the identified priority water quality problem areas of the Bay. Does the Water Resources Council or its Title II commissions distinguish between research "projects" and research "programs"? Do they review or pass on proposed research for specific water basin regions?

Answer. Yes, but because the RBC's do not currently emphasize research per se the distinction between research projects and research programs is not generally made. Individual research projects are ranked in the commission priority list when they are considered to be of major importance to plan implementation. The ranking of high priority issues requiring analysis and resolution (which all Title II commissions do) might be analogous to "program" direction.

The
Chesapeake Bay Foundation
"Citizen Representation · Environmental Education · Land Preservation"

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301 268-8816 (Annapolis) 269-0481 (Balto.) 261-2350 (Wash., D.C.)

TESTIMONY BY DAVID B. MCGRATH, DIRECTOR
THE CHESAPEAKE BAY FOUNDATION,
BEFORE THE SUBCOMITTEE ON GOVERNMENTAL EFFICIENCY AND THE DISTRICT OF COLUMBIA

Mr. Chairman, Members of the Committee:

My name is David McGrath and I am Executive Director of the Chesapeake Bay Foundation (CBF). The Chesapeake Bay Foundation is an independent organization founded to promote the conservation and rational management of the natural resources of the Bay. It is not a research organization and because of this fact I am not in a position to comment authoritatively on the full range and condition of research relating to the Bay. However, conservation and rational management of natural resources clearly must be based on the results of competent and thorough observation and research. CBF therefore has a mandate to promote competent observation and research and this interest has engaged us in a number of projects over the years including surveys and investigations on aquatic plants, water quality and other subjects. In addition, CBF conducts research in individual cases such as industrial plant sitings, discharge permits, alteration of wetlands and so forth in order to develop its position in each case. As a result and of necessity we therefore try to keep current, generally, with the important research that is going on and its findings. We are aware that there is room for improvement in the coordination of research and that coordination should work not only to avoid duplication of effort but to also assure that appropriate and essential research and observation needs are not omitted. In our experience, this latter problem may in practice be more serious than the problem of duplication. For example, there is no integrated, Bay-wide, on-going program to monitor major water quality and ecological parameters. There are many individual and partial monitoring programs covering different parts of the Bay but these do not comprise a unified monitoring system. When you consider the funds that have been spent and the scientific establishment which has been created to cover the Bay's research needs, this seems to us to be a serious omission. Doubtless the different research institutions have been able to overcome many of the difficulties which have resulted from the lack of integrated overall planning and data management but it is equally doubtless that such is not an ideal substitute for a unified monitoring program. Perhaps the legislation we are addressing here today can help rectify this situation.

The Foundation is in favor of the purposes of the legislation under consideration. In particular, we are convinced that the best way to avoid unnecessary duplication of effort in Bay-related research is to assure that researchers and resource allocators are aware of the research already done, being done or about to be done and whom it is done by. Under Section 4 the legislation establishes an information exchange which is apparently intended to achieve this purpose as the first function of the proposed office and board. The bill is not specific as to how the exchange is to be accomplished. Perhaps the compilation by the office of abstracts of available research reports and proposals, updated periodically, together with an index to the abstracts organized by subject category would be an appropriate exchange mechanism. A great deal depends on the effectiveness of such a mechanism. Its success will require a staff of well qualified researchers and research managers who have detailed knowledge of their fields and of the Bay, itself. The importance of qualified competent and experienced staff cannot be overstressed.

The formation of an overall research plan is inevitable and essential to research coordination. However, it is also a delicate and dangerous task which, if poorly executed, would be likely to cause considerable mischief. We believe that such a plan should be comprehensive and thorough in detailing the kinds of research needing to be done but flexible as regards how and when individual researches are undertaken and tolerant of overlaps involving some actual duplication in order to assure thorough coverage and accurate results. Properly formulated, used, and updated, such a plan would provide reasonable assurance against omissions of essential research needs. We believe that the act should be specific in its language as to these requirements. We suggest the following wording in Section 5, paragraph (d), sub-paragraph (1) (page 9 of H.R. 4417):

> ". . . .*Federal and State Management needs; the plan should be comprehensive in detailing the significant research needs of the Bay but flexible as to how individual research activities are comprised and conducted; and.* . . ."

We believe that this wording should help to preclude omissions of valid research needs while at the same time assuring ample latitude for individual, innovative and imaginative methods as well as for adaptability to unforeseen developments and results.

Returning to Section 4 of H.R. 4417, we have problems with sub-paragraph (2) of paragraph (c) (page 6) and particularly with the opening phase, "establish an effective mechanism. . ." We find the term mechanism somewhat ambiguous and, together with the phraseology in the rest of this item, liable to interpretation as a mandate to set up a system of rigid control which would deprive research of essential flexibility and adaptability. We would prefer substitute wording along the following lines: "Promote optimum utilization of available funds and resources to benefit the Bay area;"

Finally, we would like to recommend adoption of the version of the act contained in H.R. 4417, with the modifications already suggested, rather than the S. 1316 version. In particular, we are opposed to the provisions contained in Section 4, (c), of S. 1316 (Page 8) which authorize the Office to consider and make substantive recommendations on management of Bay resources. In our view, the Office is not organized or staffed properly in order to make it capable of giving substantive advice on management of the Bay. Its make-up is for research coordination and it should be limited to that function. Unified management of the Bay is the responsibility of other Federal and State organizations, among them the Chesapeake Bay Commission. It would be a mistake to create yet another management advisory voice without the management organization and expertise to back it up.

These are our main concerns with the legislation in question, Mr. Chairman. With the modification we have proposed we believe that the enactment of H.R. 4417 would be a positive step toward effective conservation of the natural resources of the Bay.

Respectfully submitted,

David McGrath
Director
Chesapeake Bay Foundation
162 Prince George Street
Annapolis, MD 21401

QUESTIONS WITH ANSWERS FROM THE CHESAPEAKE BAY FOUNDATION

Question. Thank you for a very thorough statement which makes important distinctions which we should bear in mind as we modify the bill before us. I particularly appreciate the distinction you make between "research" and "management".

I wonder if you also make a distinction between "research program" and "research project". One of the concerns which has been expressed about this legislation is the fear that it envisions a proposal-by-proposal review of research projects. Do you foresee this happening? And if so, is it an appropriate role for the Office of Chesapeake Bay Research?

Answer. It seems to us that the Office of Chesapeake Bay Research Coordination should not conduct a prior review of each research project but that it should receive an abstract or copy of the research proposal as well as abstracts or copies of comprehensive or summary reports of the projects' activities and conclusions. It would, in this way, build up a library of research project information which would be available to researchers and research sponsors as a means of guidance and the avoidance of unnecessary duplication. The Office staff would be able to review this material for its annual report and to provide information to parties requesting same for purposes of their own research direction.

Question. I note your testimony points out the need to assure that essential research is not omitted and is indeed, undertaken. Specifically, you noted the need for an on-going program of water quality monitoring. Are not certain Federal agencies and the State of Maryland and Virginia conducting such monitoring? What gaps in that monitoring are you aware of and who should be responsible for such monitoring?

Answer. At present there is no uniform, Bay-wide water quality monitoring system in operation. The various research institutes, VIMS, the Chesapeake Bay Biological Laboratories and others perform monitoring but this is done individually, with procedures and systems suiting the requirements of the respective institutions and covering, at most, only the political jurisdiction of the state which the particular institution may represent. An integrated, uniform system using the same parameters and site selection criteria for the whole Bay is needed. This system should be designed and managed so as to answer the basic needs not only of scientific research but of the interested public health, environmental protection, natural resource management, nature conservation, education, recreation and related communities in the Bay area. It should be designed and tested by a panel of scientists representing the appropriate disciplines and interested research organizations in the Bay area under the aegis of the Chesapeake Bay Research Consortium and, after testing, should be turned over to appropriate state agencies to be carried out. It should be an ongoing program—not limited to a fixed term and should be financed by the Federal Government as well as the two interested states. Appropriations at the Federal level should be funneled through the National Oceanic and Atmospheric Administration (NOAA) since that is the agency appropriate in terms of responsibility and performance. However, we feel that neither funds nor responsibility for this program should be passed through or delegated to the Office of Chesapeake Bay Research Coordination, since that organization is not intended to be ongoing and should not, itself, be directly involved in research or monitoring. Rather, the carrying out of the program should be done by the appropriate resource and environmental management organizations of the respective states.

The Chesapeake Bay Foundation has for a long time advocated an integrated aerial observation program for the whole Bay. EPA sponsored CBF and VIMS to conduct parallel programs for mapping of aquatic vegetation in the Bay by aerial photography during 1978 and 1979. This program was remarkably successful in that it provided detailed information not only on submerged vegetation but also on a variety of other factors such as turbidity (and its sources), disturbance of the shore and bottom and local land use. CBF has concluded as a result that an ongoing yearly aerial observation program using aerial photography to map and update Bay conditions and resources should be an essential part of the Bay monitoring program described above.

Question. The legislation before us calls for a "research plan" for the Bay. Would you describe your intepretation of what a research plan would entail?

Answer. An overall Chesapeake Bay research plan should be worked out by a group of competent scientists representing the principal organizations conducting research on the Bay, with appropriate input by responsible persons representing the interested resource management organizations (EPA, NOAA, US Fish and Wildlife, state public health and natural resources, etc.). It should be a comprehensive document outlining goals, objectives and suggesting sequence, timing and methods. It should also be flexible, allowing for overlap and repetition where necessary and for new departures and other changes where research findings and new knowledge so indicate. It should include the comprehensive monitoring system recommended above and the latter should be designed to serve its purposes and execution.

Question. Do you have any strong feeling as to where an office for Chesapeake Bay research is lodged in the federal executive branch? That is, should the office be located within an existing federal department or should it be independent?

Answer. The Office should be lodged in the National Oceanic and Atmospheric Administration.

Question. Do you have any strong feelings as to which ought to have the policy making and direction role—the fifteen member Board or the Office? It has been my observation that most organization structures are characterized by a policy-making body of officials, experts in the subject area, and affected citizens. Such a body in turn makes policy, and has a staff which carries out its directives. It occurs to me that the "Board" created by this legislation might be better equipped to perform many of the functions which are assigned by the bill to the "office". Would you comment on this?

Answer. The Board should have the policy making and directing role. The Office should serve the Board as an executive staff. It should assemble and analyze material, and formulate and draft recommendations and reports at the direction of the Board, which should review, modify as necessary and make decisions whether and how these recommendations and reports should be used.

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

II

96TH CONGRESS
1ST SESSION

S. 1316

To provide for the coordination of federally supported and conducted research efforts regarding the Chesapeake Bay, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JUNE 12 (legislative day, MAY 21), 1979

Mr. MATHIAS introduced the following bill; which was read twice and referred to the Committee on Governmental Affairs

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A BILL

To provide for the coordination of federally supported and conducted research efforts regarding the Chesapeake Bay, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Chesapeake Bay Research Coordination Act of 1979".

SEC. 2. FINDINGS AND STATEMENT OF PURPOSE.

(a) The Congress finds that—

(1) the Chesapeake Bay area is one of the greatest national resources in the United States of America, continuously serving the people of Maryland, Virginia, and the other States as an abundant source of seafood, recreation, beauty, and enjoyment;

(2) the Chesapeake Bay area serves as one of the world's major waterways, each year carrying millions of tons of waterborne shipping to and from all parts of the globe;

(3) the productivity and beauty of the Chesapeake Bay area in recent years has been diminished and threatened by water pollution, shoreline erosion, and excessive sedimentation;

(4) numerous Federal agencies have initiated and supported research projects to study, manage, enhance, protect, preserve, or restore the resources of the Chesapeake Bay area; and

(5) the various research projects relating to the Chesapeake Bay area could be more effectively coordinated in order to obtain maximum benefits.

(b) The purposes of this Act are—

(1) to provide for the rational and effective planning and coordination of federally supported research aimed at increasing fundamental knowledge in support of wise management of the Chesapeake Bay system;

(2) to identify key resource management information needs and specify a coherent program of research that will respond to these needs;

(3) to identify the needs and priorities for such additional research projects as are required for the improvement of fundamental knowledge about the Chesapeake Bay;

(4) to assure a comprehensive and balanced approach to federally supported research on the Chesapeake Bay;

(5) to encourage the utilization of the results and findings of research projects, and of other relevant information, in the management decisionmaking processes which impact on the Chesapeake Bay; and

(6) to foster public understanding of the role of the Chesapeake Bay as a unique national resource, the greatest natural ecological entity of its kind in the United States.

SEC. 3. DEFINITIONS.

For purposes of this Act—

(1) the term "Chesapeake Bay area" means the waters of the Chesapeake Bay (including the tributaries to the extent of Chesapeake Bay tidal action), the lands within and under such waters, and the wetlands adjacent to such waters;

(2) the term "research" means the endeavor to discover, develop, and verify knowledge and a careful or critical inquiry or examination in seeking facts or principles;

(3) the term "research effort" means the aggregate of all research projects in the Chesapeake Bay area;

(4) the term "research project" means any research or study for the purpose of promoting the understanding, the improved management, and the protection of the marine or coastal related resources of the Chesapeake Bay area (including those relating to water quality, coastal zone management, navigation, shoreline erosion, fisheries, shellfish, and wildlife) which is funded in whole or in part by any department, agency, or independent establishment of the Federal Government;

(5) the term "Secretary" means the Secretary of Commerce; and

(6) the term "Administrator" means the Administrator of the Environmental Protection Agency.

SEC. 4. OFFICE FOR CHESAPEAKE BAY RESEARCH, PLANNING, AND COORDINATION.

(a)(1) There is established in the executive branch an independent establishment known as the Office for Chesapeake Bay Research, Planning, and Coordination (hereafter referred to in this Act as the "Office").

(2)(A) The Office shall be headed by a Director who shall be appointed by the President in consultation with the Secretary, the Administrator, the Secretary of the Army, and the Secretary of the Interior, and who has knowledge and experience, in research efforts on the Chesapeake Bay. There shall also be in the Office a Deputy Director who shall be appointed by the Secretary. The Deputy Director shall perform such functions as the Director may from time to time prescribe.

(B) Before making any appointment under subparagraph (A), the President shall seek the recommendations of the Governor of Maryland and the Governor of Virginia with respect to individuals who are qualified to serve as the Director and Deputy Director.

(3) The Director may appoint such additional personnel for the Office as he deems desirable, and as is provided for under this Act.

(b) The Office, after consultation with the Chesapeake Bay Research Board, shall—

(1) ensure the existence of a Chesapeake Bay Research Exchange for the purpose of facilitating the rapid identification, acquisition, retrieval, dissemination, and use of information concerning all research which is

ongoing, completed, or for which funds have been requested, and which is conducted in or affects the Chesapeake Bay area;

(2) review and evaluate, on a periodic basis, and in a manner consistent with an acceptable scientific peer review process, the research effort—

(A) to ascertain the extent, if any, to which any research project for which funds have been requested complies with the research plan established by the Research Board;

(B) to make recommendations to the Federal department, agency, or independent commission from which funds have been requested for a research project on the relationship of that project to the research effort; and

(C) to make recommendations to the Research Board on possible revisions to the research plan;

(3) identify the need for, and the priority of, additional research projects which could be of benefit to such area;

(4) establish an effective mechanism for coordinating the research projects with the research of State and local government agencies for the purpose of

achieving maximum utilization of available funds and resources to benefit the Chesapeake Bay area;

(5) remain cognizant of ongoing research projects and assist in the dissemination of the results and findings of such projects;

(6) conduct periodic meetings with representatives of the departments, agencies, and independent establishments of the Federal Government having responsibility for the administration of research programs in the Chesapeake Bay area, representatives of appropriate State, regional, and local agencies, and representatives of the scientific community, in order to obtain and exchange information relating to such programs;

(7) determine existing Federal and State programs on the Chesapeake Bay and annually update this inventory;

(8) plan and conduct a conference on Chesapeake Bay affairs at least once every two years;

(9) submit an annual report to the Congress and to the Secretary within the period of one year after the members of the Research Board are appointed with respect to the administration of this subsection, together with any recommendations for improving the research effort or other related activities; and

(10) perform such other activities as are consistent with the purposes of this Act.

(c) The Office may—

(1) recommend to the appropriate Federal, State, and local government agencies improved methods for the carrying out, in an orderly, efficient, and balanced manner their activities relating to the development, use, and conservation of the resources of the Chesapeake Bay area;

(2) consider the need for, and desirability of, public works and improvements relating to the water resources in the Chesapeake Bay area or any portion thereof;

(3) consider means of improving and maintaining the fisheries of the Chesapeake Bay area; and

(4) recommend means of improving the environmental quality of the Chesapeake Bay area.

(d)(1) The Secretary shall make available, without reimbursement, to the Office such administrative services and temporary staff as may be reasonably required by the Office to enable it to carry out its functions under this Act.

(2) The Office may request from any department, agency, or independent establishment of the Federal Government (A) any information concerning grants made by such department, agency, or establishment for research in the

Chesapeake Bay area, and (B) any other assistance or information which the Office deems necessary to enable it to carry out its functions under this Act. Each such department, agency, or independent establishment shall furnish, with or without reimbursement, to the Office any such assistance or information so requested consistent with other Federal law.

SEC. 5. CHESAPEAKE BAY RESEARCH BOARD.

(a) There is established a Board to be known as the Chesapeake Bay Research Board (hereafter referred to in this section as the "Board").

(b)(1) The Board shall consist of—

(A) two members selected by the Governor of Virginia;

(B) two members selected by the Governor of Maryland;

(C) eleven members selected by the Secretary, in consultation with the Administrator, the Secretary of the Army, and the Secretary of the Interior, from among individuals who, by reason of their knowledge and experience, are qualified to perform the functions of the Board; and

(D) the Director of the Office, who shall serve ex officio as a nonvoting member.

(2) Before selecting members under paragraph (1)(C), the Secretary shall seek the recommendations of the Gover-

nor of Maryland and the Governor of Virginia with respect to individuals who are qualified to serve as members of the Board and shall insure that the interests of State and local government, industry, the public, and the scientific and environmental communities are represented.

(c) The Chairman of the Board shall be elected annually by the membership of such Board.

(d) The Board shall—

(1) develop a Chesapeake Bay Research Plan consistent with the missions and interests of appropriate agencies and States, and update this program annually to reflect changing priorities in Federal and State management needs;

(2) advise the Director of the Office with respect to the carrying out of the duties and responsibilities set forth in this Act; and

(3) review, evaluate, and comment upon the annual report submitted pursuant to section 4(b)(9) and provide any comments or recommendations which it may have for improving the effectiveness of the Office (with such review and evaluation and any such comments and recommendations being submitted as an appendix to such annual report).

(e) Members of the Board (other than those who are employees of the Federal Government) may, while engaged in business for the Board, receive compensation for travel expenses and per diem in lieu of subsistence, in the same manner as the expenses authorized by section 5703 of title 5, United States Code, for persons employed intermittently in Government service.

SEC. 6. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Office to carry out the purposes of this Act the sum of $500,000 for each of the three fiscal years ending on September 30, 1980, September 30, 1981, and September 30, 1982.

SEC. 7. RELATIONSHIP OF ACT TO EXISTING FEDERAL, STATE, AND LOCAL POWERS.

(a) Nothing contained in this Act shall be construed to affect the jurisdiction, powers, or prerogatives of any existing department, agency, or officer of the Federal Government or of any State or local government.

(b) In administering this Act and in submitting the annual report pursuant to section 4(b)(9) the Secretary, the Office, and the Research Board shall make such recommendations as may appear appropriate with respect to any existing laws which may affect or be involved in the research effort.

SEC. 8. TERMINATION.

This Act and the authority conferred by this Act shall terminate three years after the date of its enactment. At such time the Secretary, in consultation with the Administrator, shall submit to the Congress an evaluation of the effectiveness of the Office and of this Act. In the preparation of such report, comments shall be solicited from Federal agencies, the Governors of Maryland and Virginia, and the research institutions, industries, and environmental and citizen's groups concerned with the Chesapeake Bay.

II

96TH CONGRESS
2D SESSION

H. R. 4417

IN THE SENATE OF THE UNITED STATES

MAY 21 (legislative day, JANUARY 3), 1980

Read twice and referred to the Committee on Governmental Affairs

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AN ACT

To provide for the coordination of federally supported and conducted research efforts regarding the Chesapeake Bay, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Chesapeake Bay Research Coordination Act of 1980".

SEC. 2. FINDINGS AND STATEMENT OF PURPOSE.

(a) The Congress finds that—

(1) the Chesapeake Bay area is one of the greatest national resources in the United States of America, continuously serving the people of Maryland, Virginia,

and the other States as an abundant source of seafood, recreation, beauty, and enjoyment;

(2) the Chesapeake Bay area serves as one of the world's major waterways, each year carrying millions of tons of waterborne shipping to and from all parts of the globe;

(3) the productivity and beauty of the Chesapeake Bay area in recent years has been diminished and threatened by water pollution, shoreline erosion, and excessive sedimentation;

(4) numerous Federal agencies have initiated and supported research projects to study, manage, enhance, protect, preserve, or restore the resources of the Chesapeake Bay area; and

(5) the various research projects relating to the Chesapeake Bay area could be more effectively coordinated in order to obtain maximum benefits.

(b) The purposes of this Act are—

(1) to provide for the rational and effective coordination of federally conducted and supported research aimed at increasing fundamental knowledge in support of wise management of the Chesapeake Bay system;

(2) to identify key resource management information needs and specify a coherent program of research that will respond to these needs;

(3) to identify the needs and priorities for such additional research projects as are required for the improvement of fundamental knowledge about the Chesapeake Bay;

(4) to assure a comprehensive and balanced approach to federally conducted and supported research on the Chesapeake Bay;

(5) to encourage the utilization of the results and findings of research projects, and of other relevant information, in the management decisionmaking processes which impact on the Chesapeake Bay; and

(6) to foster public understanding of the role of the Chesapeake Bay as a unique national resource, the greatest natural ecological entity of its kind in the United States.

SEC. 3. DEFINITIONS.

For purposes of this Act—

(1) The term "Chesapeake Bay area" means the waters of the Chesapeake Bay (including the tributaries to the extent of Chesapeake Bay tidal action), the lands within and under such waters, and the wetlands adjacent to such waters.

(2) The term "research" means the endeavor to discover, develop, and verify knowledge and a careful

and critical inquiry or examination in seeking facts or principles.

(3) The term "research program" means any research in the Chesapeake Bay area for the purpose of promoting the understanding, the improved management, and the protection of the marine or coastal related resources (including those relating to water quality, coastal zone management, navigation, shoreline erosion, fisheries, shellfish, and wildlife) which are funded in whole or in part by any department, agency, or independent establishment of the Federal Government.

(4) The term "Secretary" means the Secretary of Commerce.

SEC. 4. OFFICE FOR CHESAPEAKE BAY RESEARCH COORDINATION.

(a)(1) The Secretary shall establish in the Department of Commerce a separate office known as the Office for Chesapeake Bay Research Coordination (hereafter referred to in this Act as the "Office").

(2)(A) The Office shall be headed by a Director who has knowledge and experience in research efforts on the Chesapeake Bay, and who shall be appointed by the Secretary in consultation with the Administrator of the Environmental Protection Agency, the Secretary of the Army, the Secretary of the Interior, and the Secretary of the Smithsonian Institution.

(B) Before making any appointment under subparagraph (A), the Secretary shall seek the recommendations of the Governor of Maryland and the Governor of Virginia with respect to individuals who are qualified to serve as the Director.

(3) The Director may appoint such personnel for the Office as he deems desirable, and as is provided for under this Act.

(b) The Office, after consultation with the Chesapeake Bay Research Board, shall—

(1) ensure the existence of a Chesapeake Research Exchange for the purpose of facilitating the rapid identification, acquisition, retrieval, dissemination, and use of information concerning all research which is ongoing, completed, or for which funds have been requested, and which is conducted in or affects the Chesapeake Bay area;

(2) review and evaluate, on a periodic basis, the Federal research programs pertaining to the Chesapeake Bay, and ascertain the extent to which the research programs are consistent with the Chesapeake Bay Research Plan established by the Research Board established under section 5;

(3) make recommendations to the Federal departments, agencies, and independent commissions on the relationship of their programs to such Research Plan; and

(4) make recommendations to the Research Board on possible revisions to such Research Plan.

(c) The Office shall work with the Research Board to—

(1) identify the need for, and the priority of, research programs which could benefit the management of the resources of the Chesapeake Bay;

(2) establish an effective mechanism for the purpose of achieving maximum utilization of available funds and resources to benefit the Chesapeake Bay area;

(3) remain cognizant of ongoing research projects and assist in the dissemination of the results and findings of research programs;

(4) conduct periodic meetings with representatives of the departments, agencies, and independent establishments of the Federal Government having responsibility for the administration of research programs in the Chesapeake Bay area, representatives of appropriate State, regional, and local agencies, and representatives of the scientific community, in order to obtain and exchange information relating to such programs;

(5) determine existing Federal and State programs relating to the Chesapeake Bay and annually update this inventory;

(6) plan and conduct a conference on Chesapeake Bay affairs at least once every two years;

(7) prepare for the Secretary, the Governors, and the Congress an annual report on research programs, current and planned, pertaining to the Chesapeake Bay; which report shall note the cost, expected results, and implications for management agencies; and

(8) perform such other activities as are consistent with the purposes of this Act.

(d)(1) The Secretary shall make available to the office such administrative services and temporary staff as may be reasonably required by the Office to enable it to carry out its functions under this Act.

(2) The Office may request from any department, agency, or independent establishment of the Federal Government (A) any information concerning grants made by such department, agency, or establishment for research in the Chesapeake Bay area, and (B) any other assistance or information which the Office deems necessary to enable it to carry out its functions under this Act. Each such department, agency, or independent establishment shall furnish, with or

without reimbursement, to the Office any such assistance or information so requested consistent with other Federal law.

SEC. 5. CHESAPEAKE BAY RESEARCH BOARD.

(a) There is established a committee to be known as the Chesapeake Bay Research Board (hereafter referred to in this section as the "Board").

(b)(1) The Board shall consist of—

(A) four members selected by the Governor of Virginia;

(B) four members selected by the Governor of Maryland;

(C) seven members selected by the Secretary, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of the Army, the Secretary of the Interior, and the Secretary of the Smithsonian Institution.

(2) The Secretary, the Governor of Maryland, and the Governor of Virginia shall ensure that the Board is comprised of individuals who are qualified to perform the functions of the Board and who represent the interests of Federal, State, and local government, industry, the public, and the scientific and environmental communities.

(c) The Chairman of the Board shall be elected annually by the membership of such Board.

(d) The Board shall—

(1) develop a Chesapeake Bay Research Plan consistent with the missions and interests of appropriate agencies and States, and update this program biennially to reflect changing priorities in Federal and State management needs; and

(2) review, evaluate, and comment upon the annual report submitted pursuant to section 4(c)(6) and provide any comments or recommendations which it may have for improving the effectiveness of the Office (with such review and evaluation and any such comments and recommendations being submitted as an appendix to such annual report).

(e) Members of the Board (other than those who are employees of the Federal or State Governments) may, while engaged in business for the Board, receive compensation for travel expenses and per diem in lieu of subsistence, in the same manner as the expenses authorized by section 5703 of title 5, United States Code, for persons employed intermittently in Government service.

SEC. 6. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Office to carry out the purposes of this Act the sum of $500,000 for each of the three fiscal years ending on September 30, 1981, September 30, 1982, and September 30, 1983.

SEC. 7. RELATIONSHIP OF ACT TO EXISTING FEDERAL, STATE, AND LOCAL POWERS.

(a) Nothing contained in this Act shall be construed to affect the jurisdiction, powers, or prerogatives of any existing department, agency, or officer of the Federal Government or of any State or local government.

(b) For purposes of administering this Act (including the preparation of an annual report pursuant to section 4(c)(7)) the Office shall solicit from the Secretary, the Governors, and the Research Board any recommendations that may be appropriate with respect to any existing law which may affect or be involved in the research effort.

SEC. 8. TERMINATION.

This Act and the authority conferred by this Act shall terminate three years after the date of its enactment. At such time the Secretary, in consultation with the Administrator, shall submit to the Congress an evaluation of the effectiveness of the Office and of this Act. In the preparation of such report, comments shall be solicited from Federal agencies, the Governors of Maryland and Virginia, and the research institutions, industries, and environmental and citizen's groups concerned with the Chesapeake Bay.

Passed the House of Representatives May 19, 1980.

Attest: EDMUND L. HENSHAW, JR.,
Clerk.

By THOMAS E. LADD,
Assistant to the Clerk.

EPA REPORT TO SENATOR MATHIAS JULY, 1980

THE CHESAPEAKE BAY ENVIRONMENT

The Chesapeake Bay drains freshwater from a 64,000 square mile area, including parts of Virginia, West Virginia, Maryland, Delaware, Pennsylvania, and New York. Over a hundred rivers, creeks and branches feed the estuary. Water from the drainage basin and the Atlantic Ocean sustains a wide variety and abundance of finfish, shellfish, waterfowl and wildlife.

In addition, the Bay offers great economic benefits. Its fishing industry is one of the largest on the East Coast, producing a seafood harvest valued at up to $175 million. Recreation is a $200 million a year industry and more than 100 million tons of cargo travel the Bay channels every year, worth about $8 billion.

The Chesapeake Bay is generally a productive body of water, but certain signals--such as declines in bay grasses and oyster catches--warn us that not all parts of the Bay are functioning well.

How serious are the problems? Who, or what, causes them? How can we correct the situation to ensure continued balance in the environment? The Bay is a large and complex ecosystem in which all the ecological processes are interrelated and interdependent. Any of our activities either directly in the Bay or within the larger drainage basis can affect that fragile system.

Current and projected population growth and associated land use in the area will bring an array of changes which will affect the Bay. For example, industrial development coincident with population growth means more waste products which might find their way into the Bay. Agricultural and forest land converted to residential use generally means more paved areas and more run-off of waste by-products into creeks feeding the estuary.

At least part of the challenge in years ahead will be how to assimilate growth and change brought on by human activity to preserve the health and productivity of the Bay. Beyond sustaining the current status, how can we enhance the quality of the environment? Federal, State and local water quality managers--and the public--must share the responsibility of answering these difficult questions.

This is a summary of the major problems and environmental pressures on the Chesapeake Bay.

THREE CORE PROBLEMS ARE THE CENTRAL CONCERN

The Chesapeake Bay Program, under the auspices of the Environmental Protection Agency, focuses its activities on three problems identified by Federal, State and citizen representatives: submerged aquatic vegetation, toxics and nutrients. The ultimate goal of this program is providing enough information to make rational decisions on alternative courses of action.

Declining Submerged Aquatic Vegetation

Public concern has been growing in recent years over the disappearance of submerged aquatic vegetation in the Chesapeake Bay. For example, two decades ago, the Susquehanna flats area was lush with submerged aquatic vegetation; today it is barren. The grasses buffer waves, reduce shoreline erosion and act as sediment traps. The loss of the submerged grasses can influence the productivity of the ecosystem. The disappearance of vegetation also alters the feeding habits of waterfowl.

Research will determine the physiological and ecological requirements for growth and survival of the Bay grasses and will document their role in the Bay ecosystem. A number of problem areas which may affect the loss of submerged grasses are discussed in this document. The submerged aquatic vegetation research program will help us evaluate options for preserving the Bay environment.

Toxics Accumulation in the Food Chain

Toxic substances are chemical compounds or heavy metals which damage human health and other parts of the environment. Most of these compounds are by-products of our increasingly complex industrial economy. We have created many new compounds and the number increases each year.

As chemical use increases, more toxics may be introduced into the environment. These toxics are incorporated into the food chain where they affect Bay grasses, shellfish, finfish and ultimately us. Although some toxics produce an immediate response - fish kills, for example--most do not cause any apparent damage until long after they are introduced into the system.

Current Controls: The Federal responsibility for toxic substance control is to test new synthetic materials before they are marketed, to assure their proper use and handling, and to guarantee the safe disposal of suspect materials. We are making significant progress in the premanufacture testing of pesticide and organic chemicals. Most industries have already installed extensive pollution controls and comply with discharge permits. We are now turning our attention to the safe disposal of hazardous waste.

Since some of these substances do not decompose quickly, their persistence in the environment is a primary concern. Kepone in the James River is one example. Our strategy for solving the problem of toxic materials must address all known pollutants as well as new ones.

Nutrients

In reasonable amounts, nutrients can be beneficial and increase productivity in the Bay. In excess, nutrients can cause algal blooms, oxygen deficits, fish kills and, over the long term, may lead to serious ecological damage.

Major sources of excess nutrients include sewage treatment plants, industrial discharges, and a wide range of "non-point" sources, i.e., agriculture, logging operations, and construction sites as well as runoff from urban and suburban areas. As the population increases, the contribution from these sources will correspondingly increase. For instance, the wastewater flows on the Patuxent River currently are 40.1 cubic feet per second and estimated to grow to 68.9 cubic feet per second in the year 2000.

Current Controls: The National Pollution Discharge Elimination System (NPDES) program, administered by EPA and delegated to Bay area States, attempts to control "point" source discharges from both industrial facilities and sewage treatment plants by requiring permits from all dischargers. The permits set discharge limitations based upon both available technology and the environmental impact of the discharge on the receiving waters. To help mitigate non-point source pollutants from agricultural, forest, construction and urban areas, various Federal, State, and local agencies have developed techniques called "Best Management Practices."

Current research is identifing the extent of nutrient enrichment of the estuarine system. Conditions will change in the future, and control strategies must anticipate those changes. We are measuring present nutrient inputs and will identify acceptable ranges of nutrients for the years 1980 and 2000.

MANY PRESSURES AFFECT THE BAY

Recreational Boating and Commercial Shipping

Recreational boating and commercial shipping are increasing in the Chesapeake Bay. For example, in 1970 the State of Maryland registered 68,000 recreational boats; by 1979, the number was 132,000. This expansion of boating and shipping, already a crucial element of the Baltimore labor market, will have an increasing impact on the Bay in the future. Maintaining deep navigation channels requires frequent dredging. Expanded port and marine facilities will claim additional land. The probability of damage to natural habitats from oil and hazardous material spills will increase.

Current Controls: Federal, State and local governments have already introduced a number of control mechanisms. Restrictions on vessel discharges currently exist, but the shortage of dockside pumpout facilities and inability to enforce these restrictions weaken their effectiveness. Speed limits in the sensitive parts of tributaries, as well as structural controls such as bulkheads reduce erosion caused by boat wakes. Regulations on the handling of petroleum products minimize the potential for oil spills, but the number of spills still increases each year.

Dredging

To remain navigable, the channels of the Chesapeake Bay must be dredged regularly -- requiring removal of about 10,000,000 cubic yards per year. As commercial ships continue to get bigger, the major shipping channels must be deepened. Resuspension of sediments and associated toxic substances during dredging can seriously affect the life processes in the Bay.

Current Controls: Mechanisms currently available under existing Federal, State, and local authorities include:

- o authority for the planning, design, and construction of dredging projects
- o control of the disposal of wastes, including dredged materials
- o authority to develop a dredging and disposal management plan for design and construction of small harbor channels
- o authority to regulate and monitor dredging and disposal and to evaluate alternatives
- o required permits for all dredging projects.

Shoreline Erosion

About 45,000 acres of shoreline around the Chesapeake Bay have eroded during the last 100 years. Sharps Island near the mouth of the Choptank River, once covered several hundred acres; it is now a shoal marked only by a lighthouse. Although the major processes responsible are natural phenomena such as wave action, tides, and groundwater flow, more recent human activities have increased the rate of erosion. For instance, industrial or residential development can eliminate natural shoreline defenses against erosion such as vegetative cover, beaches, and dunes. Eroded sediments can affect the natural environment of the Chesapeake Bay by filling channels, which then require dredging, and by covering Bay plants and animals, thereby impairing their life processes. Economic harm includes loss of property and subsequent loss of tax revenues.

Current Controls: Technological methods are available to lessen shoreline erosion, but they are costly and difficult to implement. A sediment and erosion control plan is already required before any soil disturbance can take place. In most instances, construction of shoreline erosion control structures also requires compliance with Maryland wetlands laws.

Hydrologic Modifications

Hydrologic modification refers to any change in flow, movement or circulation of waters. Human activities that cause such actions include increased stormwater runoff from urban areas, withdrawal of freshwater from the tributaries for drinking water, industrial or energy generation uses, and construction of dams and impoundments.

These changes can alter the salinity, flooding and flushing of the Bay and its tributaries. Increased impervious surfaces associated with urban growth (streets, parking lots, etc.) result in larger volumes of stormwater runoff and greater flooding. This increased volume of freshwater can reduce the salt content of the tidal waters. Reducing the flow of freshwater (for drinking water or irrigation, for instance) may have the opposite impact--increased salinity in the tidal waters, or saltwater intrusion in the underground water a table if the withdrawal is from the groundwater.

Current Controls: Current water quality planning requires an analysis of hydrologic modifications. A number of soil conservation practices are being used. Regulations control floodplain development. Low-flow studies have identified the environmental impact of consumptive withdrawal and the transfer of freshwater from one basin to another.

FUTURE GROWTH WILL INCREASE PRESSURE

The Chesapeake Bay region grew twice as fast (27%) as the national average between 1960 and 1970. The next 20 years will probably bring another 28% increase in population, and a similar increase in commercial, industrial and energy facility development. These increases will intensify pressure on the Bay:

- land will be converted from forest and agricultural uses to residential, commercial and industrial uses, aggravating the problem of urban stormwater runoff. Wetlands will be subject to increased pressures.

- increased demand and reduction of farmland will likely lead to more intensive agriculture and heavier dependence on fertilizers, pesticides and herbicides

- o additional recreational facilities will be necessary
- o the nutrient problem from sewage treatment plants and septic tanks will increase substantially
- o shipping demand will increase to service larger populations.

Current Controls: Local land use planning and zoning is the primary means of controlling development. Local governments, through Maryland State enabling legislation, are responsible for zoning decisions and sub-division regulations. These regulations and other devices, such as moratoria on providing additional water and sewer services, guide growth and development in the area.

In the past, as much as 1000 acres a year of Bay wetlands were lost to other uses. However, State and Federal laws have reduced these losses to about 10 acres per year.

EPA, in cooperation with both State and local governments, is funding the construction of wastewater treatment plants for cleaning up pollution from sewage. EPA has funded over $677 million in Maryland projects alone. EPA and the State regulate industrial discharges into the Bay area, as well as shipping and recreational boating discharges.

* * * * *

People create pollution. The urban, agricultural and industrial patterns we have created generate the pollution in the Bay area and, as the population grows, that pollution will increase. Many pollution issues in the Bay region hinge on land use and conflicts among human activities. If we are to protect the Bay environment, the people in the area must face these conflicts and make difficult tradeoffs.

Regardless of which tradeoffs we make, we must consider our choices in light of the Bay as a total, delicate system. One pollutant or one control option could affect the entire Bay. We must understand: 1) the sources of the different pollutants in the Bay 2) their impact on the Bay, and 3) the costs and benefits associated with pollution control. Then we will be better able to make the best choices for preserving the environmental quality of the Chesapeake Bay.

GENERAL COUNSEL OF THE
UNITED STATES DEPARTMENT OF COMMERCE
Washington, D.C. 20230

8 SEP 1980

Honorable Charles McC. Mathias
United States Senate
Washington, D.C. 20510

Dear Senator Mathias:

This is in response to your request for the views of this Department with respect to House-passed H.R. 4417, and S. 1316, currently being considered by the Committee on Govermental Affairs. These are bills -

> "To provide for the coordination of federally supported research efforts regarding the Chesapeake Bay, and for other purposes."

H.R. 4417 would create within the Department of Commerce an independent establishment known as the Office for Chesapeake Bay Research Coordination (the Office). The Office would be headed by a Director appointed by the Secretary of Commerce, after consulting with various Federal agencies and after receiving recommendations of the Governor of Maryland and the Governor of Virginia. The Office would, after consultation with the Chesapeake Bay Research Board also created by the bill, ensure the existence of a Chesapeake Research Exchange for the purpose of acquiring and disseminating information concerning research; review and evaluate Federal research programs pertaining to Chesapeake Bay; establish means to coordinate research conducted by Federal, state, and local government agencies; conduct meetings to exchange information; and submit an annual report to Congress and the Secretary of Commerce. The Office could also recommend to the appropriate governmental agencies methods to carry out their activities related to the development and use of natural resources and water resource projects.

The bill also would establish a Chesapeake Bay Research Board (the Board). The Board would consist of four members selected by the Governor of Virginia; four members selected by the Governor of Maryland; and seven members selected by the Secretary in consultation with other Federal agency heads. The Board would develop a Chesapeake Bay Research Plan, consistent with Federal and state needs, and would advise the Director of the Office with respect to the carrying out of the duties and responsibilities of the Office.

The bill would authorize $500,000 each year for fiscal years 1981 through 1983 to carry out the purpose of the Act.

S. 1316 is substantially similar to H.R. 4417, but differs in the following respects:

1) S. 1316 would also establish an Office of Chesapeake Bay Research, but does not specify where in the Executive Branch the Office would be located.

2) The Director of the Office would be appointed by the President under S. 1316. The Secretary of Commerce would appoint the Director under H.R. 4417.

3) S. 1316 provides for a 16-member Board, with the Director of the Office being a non-voting ex officio member of the Board, while H.R. 4417 would provide for 15 members.

4) S. 1316 would provide for funding the activities through September 30, 1982, while H.R. 4417 would provide funds through September 30, 1983.

Coordination of the research activities involving the Chesapeake Bay is a laudable goal. However, we believe that the creation of a separate office for this purpose is not necessary, since mechanisms already exist at the Federal level for this purpose. We therefore cannot support this legislation.

The Environmental Protection Agency currently has a Chesapeake Bay program which has as its primary objectives (1) to assess the principal factors adversely impacting the environmental quality of the Chesapeake Bay by considering the needs of the Bay users, (2) to direct and coordinate research and abatement programs, and (3) to establish a continuing capability for evaluating, storing, analyzing and disseminating environmental sampling data. We believe that these comprehensive objectives address the major concerns and goals of S. 1316 and H.R. 4417. Furthermore, The National Science Foundation has an institutional mechanism for providing clearinghouse services and research coordination on the Chesapeake. This institutional mechanism, the Chesapeake Research Consortium, Inc., incorporated in 1972 in Maryland, is comprised of the University of Maryland, Johns Hopkins University, the Virginia Institute of Marine Science, and the Smithsonian Institution.

In our view, it would be duplicative to create a new Federal office to perform those functions currently assigned to the Chesapeake Research Consortium and to EPA. We are also concerned about the creation of the new office in view of the President's belief that there should not be a proliferation of government agencies.

We are pleased that the need for more effective research on the resources and problems of Chesapeake Bay is being recognized and addressed by the Congress. Problems of this vast and complicated ecosystem have concerned us for some time. Under the increasing pressure of population growth and development programs, effective research and management are needed on a wide variety of environmental and natural resource management questions. NOAA has been actively supporting this work for some time, and in this regard, I am pleased to provide the following figures showing the expenditures by NOAA, through the National Marine Fisheries Service (NMFS), for research related to Chesapeake Bay since 1970. These figures include expenditures of funds for inhouse research work and some contracts for work outside the agency. In addition funds distributed by grants to the States under Public Law 89-304 and Public Law 88-309 are included. Expenditures of funds received through transfer from other agencies are not included since we assume that the other agencies will report these expenditures.

FISCAL YEAR	DIRECT EXPENDITURES	GRANTS P.L. 89-304	88-309	TOTAL
1970	$ 300.00*	188.6*	135.3*	623.9*
71	250.00	126.3	156.1	532.4
72	200.00	166.1	143.3	509.4
73	150.00	144.7	136.70	431.40
74	120.00	151.6	945.90	1217.50
75	100.00	171.40	297.90	569.30
76	85.00	217.60	111.70	414.30
77	85.00	106.70	119.80	311.50
78	75.00	193.60	162.40	431.00
79	75.00	192.10	139.40	406.50
80	75.00	281.30	173.80	530.10
TOTAL	1515.00	1940.00	2522.30	5977.30
1979 GRANTEES				
Maryland		95.30	29.80	125.1
Virginia		96.80	109.60	206.4

* in thousands of dollars

I am enclosing for the Committee's information a recent summary statement entitled "The Condition of the Chesapeake Bay - An Assessment of Its Present State and Its Future," by Dr. Robert L. Lippson and Alice Jane Lippson, of NOAA. This excellent summary by these two well known authorities on the Chesapeake Bay was prepared for the International Council for the Exploration of the Sea Marine Environmental Quality Committee. It was presented at the International Council meeting in Warsaw, Poland in October, 1979, by the Official NOAA representative to the Conference, Dr. John B. Pearce of the National Marine Fisheries Service of NOAA. We believe that this summary will be helpful to the Committee in its deliberation concerning research and management needs of the Chesapeake Bay.

We have been advised by the Office of Management and Budget that there is no objection to the submission of our letter to the Congress from the standpoint of the Administration's program.

Sincerely,

Homer E. Moyer, Jr.

Homer E. Moyer, Jr.
General Counsel

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 8 1980

THE ADMINISTRATOR

Honorable Charles McC. Mathias, Jr.
United States Senate
Washington, D.C. 20510

Dear Senator Mathias:

Thank you for your August 4, 1980, letter requesting the views of the Environmental Protection Agency on S. 1316 and H.R. 4417, as passed by the House on May 19, 1980, providing for the coordination of Federally supported research on the Chesapeake Bay.

As you know, both bills would provide coordinating mechanisms to ensure the dissemination and exchange of information relating to the Bay developed in the course of Federally sponsored research. S. 1316 would establish an independent office for Chesapeake Bay Research, Planning, and Coordination for this purpose. H.R. 4417, as passed, would establish within the Department of Commerce a separate office for Chesapeake Bay Research Coordination. Both offices would periodically review and evaluate Federal research programs to ensure consistency with an overall Chesapeake Bay Research Plan to be developed under the bills.

One of the major differences between the bills is the inclusion in S. 1316 of management and planning responsibilities for the Chesapeake Bay Office. Under S. 1316, the Office would be authorized to recommend to Federal, State, and local government agencies improved methods for carrying out their activities relating to the development, use, and conservation of the Bay's resources; to consider the need for and desirability of public works improvements relating research. We have recently been asked by the NSF to provide copies of all such research in the SSIE system on this topic for their use. The actual number of projects can vary depending on the parameters used to define the actual scope of research.

Although Federal agencies are not presently required to provide such information to SSIE, it is expected that in the near future the OMB may issue a policy bulletin which requires that they do so to insure more comprehensive input and thus further enhance the value of the system as an important R&D management tool. We would hope that as the bill receives further consideration that it take into cognizance the Exchange's ability and willingness to participate in helping to provide a number of services in support of those functions proposed for the Office for Chesapeake Bay Research, Planning and Coordination that deal with research in progress. Clearly one would wish to build on and use existing services wherever possible to avoid duplicating or creating new inventories without regard to available information. I believe the Exchange can be of assistance to the proposed office with regard to a number of functions which are described based on our previous and current experience should the bill pass.

If I can be of further assistance to you please do not hesitate to call.

Sincerely,

David F Hersey

David F. Hersey
President

Enclosures

DFH/pm

Attachment 1

SSIE USES AND BENEFITS TO R&D MANAGERS, PLANNERS AND POLICY MAKERS

Facts — The Smithsonian Science Information Exchange (SSIE) with 30 years of continuous operation:

- Is the nation's largest data base of information about ongoing or recently completed research (approximately 120,000 projects are registered each year). This means rapid access to research information prior to publication which can result in significant savings of both time and dollars.
- Includes Federally supported unclassified scientific and technical research including grant, contract and in-house supported research.
- Includes information on research supported by many private foundations, fund raising agencies, state and local governments, and to a lesser extent, industry.
- Maintains the information in a computerized data base both at SSIE and on-line through two commercial vendors. This means a rapid response time to requests.
- Maintains a staff of scientists and engineers. Subject indexing and retrieval at SSIE is done by a staff of information specialists trained in subject areas covering all fields of scientific research and engineering. Interaction with a scientist trained in specific areas of interest can assure quality retrieval.
- Has the ability to retrieve information on research which any organization supports or performs, all research in which any investigator is involved, or research being performed in a geographical location (country, state, city). Can retrieve any combination of the above administrative data alone or in relationship to a specific research topic.
- Can provide information in a variety of formats (compilation of descriptions, tables, matrices, magnetic tape or in the form of directories ready for publication).

Use and Benefits

- The Exchange as the nation's largest register of research in progress, represents a *single* multidisciplinary source which can be queried for information. If and when significant gaps in coverage are thought to occur, SSIE can query organizations directly for missing information through established contacts.
- The Exchange provides a mechanism by which organizations can *coordinate* research efforts in a selected research field when these efforts are carried out or supported by more than one organization. This information permits the requester to determine which organizations support research in any area of interest. The system can identify how many projects each organization is supporting on specific topics within a given research field and identify those projects which are closely related or identical. *Checking of major proposals with SSIE prior to funding allows users to determine whether there may be unwarranted duplication*.

- Use of the SSIE data base to check an investigator's name can identify all projects on which an investigator is principal or co-investigator. A check on the number of research projects in which an investigator is currently involved provides a method for further query to determine if an investigator might be over-committed.

- The Exchange's data base and service provides a way to review a broad field of research to determine areas within the field which might be over- or under-supported. SSIE's unique system of indexing allows it to tabulate data by sub-fields and to identify the numbers of projects, and to some extent the funding levels each agency or organization has committed in support of various sub-fields of research. At present, more detailed financial information may have to be obtained from the agencies involved but SSIE's information provides a base for obtaining such information.

- The Exchange provides a mechanism for drawing together monthly, quarterly, or annually all research in a given subject area for publication and dissemination. Preparation of directories can be done with a variety of indexes including subject topics, supporting and performing organizations, and investigators performing the research. This capability provides a continuing awareness of research initiated or in progress in a given subject area.

- The Exchange can develop specialized data bases of ongoing research to meet specific agency needs. Additional data elements, special indexing and collection and processing of information not presently included in the Exchange's files can be accomplished under individual grants and contracts. SSIE's 30 years of experience and the flexibility of its system allow undertaking such projects at minimal time and cost.

- The Exchange can provide information on potential consultants, active in a specific research area, including their name, address, and information on their current research efforts.

Attachment 2

EXECUTIVE OFFICE OF THE PRESIDENT
NATIONAL COUNCIL ON MARINE RESOURCES
AND ENGINEERING DEVELOPMENT
WASHINGTON 20500

EXECUTIVE SECRETARY

Dear Colleague:

The 1967 Report of the President to Congress, *Marine Science Affairs*, describes the flow of information as "the lifeblood of a marine science and technology enterprise." The National Council on Marine Resources and Engineering Development has taken the view that a truly coordinated, national marine sciences program must provide for the information needs of scientists and program managers, as well as Government policy planners. Consequently, one of the Council's first initiatives was to authorize a broadly-based study, now underway, of the Nation's oceanographic data management requirements.

Last April, the Council took a second step toward upgrading the transfer of marine science information. The Science Information Exchange of the Smithsonian Institution was designated the national information center for marine science research in progress and requested to develop a publicly-available inventory of marine research activities within and outside Government.

Although Federal agencies with marine science missions are providing records of relevant research activities, the success of the inventory from the standpoint of providing a complete and authentic picture of the national effort depends critically upon the cooperation of the non-federal sector.

Therefore, on behalf of the Council, I invite interest by your organization in this inventory. Your contribution of information about privately-sponsored research will help create a tool to improve research project selection and policy planning, and thereby enhance our Nation's marine science endeavors.

Sincerely,

Edward Wenk, Jr.

Attachment 3

MARINE RESEARCH 1973

(Interagency Committee on Marine Science and Engineering, Federal Council for Science and Technology)

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tidal zone of the wetlands. To achieve this a comparative study of the microorganisms characteristic of the tidal zone will be made using a combined biochemical and taxonomic viewpoint. Both for practical reasons and because of the pivotal environmental significance, the first two years will be mainly devoted to a survey of the sulfur cycle. Specifically, the survey will: A) investigate sulfur cycle organisms in tidal, land, and aquatic zones, and also the sulfur components of their substrates. B) Attempt quantitative estimates of specific microbial populations. C) Construct a model for the dynamics of the sulfur cycle in a tidal habitat.

Progress to Date: Specific experimental approaches and techniques have been formulated as a result of a six month review of available literature. Experimental work, which was delayed pending funding, was initiated January 1, 1972.

SUPPORTED BY Johns Hopkins University

1.0098, STUDIES OF THE PHYSICAL HYDROGRAPHY OF THE RHODE RIVER ESTUARY

D.W. PRITCHARD, **Smithsonian Institution, *Edgewater, Maryland* 21037**

Objectives: The near term objectives of this program are: A) To determine the spacial and temporal distribution of salinity in the Rhode River, West River and in the adjacent segment of the Chesapeake Bay; B) to relate the temporal and spacial distribution of salinity in the Rhode River and West River, to fresh water inflow from the local watersheds, and to the temporal variation in salinity in the adjacent Chesapeake Bay: C) to determine non-tidal circulation pattern in the Rhode River estuary; D) to relate the time variations in this circulation pattern to time variations in the salinity (density) distribution and to time and spacial variations in the wind field; E) to determine the processes of mixing of the waters within the Rhode River estuary, and of the exchange of the waters of this estuary with the waters of the adjacent segment of the Bay.

Progress to Date: The Chesapeake Bay Institute Data Bank has been searched for physical and chemical data collected at stations in the Chesapeake Bay near the mouth of the Rhode River - West River system. Temperature and salinity data have been collected as part of Bay-wide surveys over the last 23 years at a station located approximately three and one-half miles northeast from Beverly Beach; at a station located off Bloody Point Light, on the east side of the Bay opposite Horseshoe Point; and at a string of four stations extending across the Bay about three miles south of Horseshoe Point. Data are also available for five stations located in South River, the next tributary estuary north of Rhode River.

Field work in the Rhode River under this project has not yet started. However, physical and chemical data already collected as part of other projects are available, as are the results of a dye dispersion study in Muddy Creek and in the nearby reaches of Rhode River conducted by Yotsukuro, Cory and Murakami.

SUPPORTED BY Johns Hopkins University

1.0099, MASS SPECTROMETRIC AND MANOMETRIC STUDIES OF THE OCEANS AND THE ATMOSPHERE

B.B. BENSON, **Amherst College, Graduate School, *Amherst, Massachusetts* 01002**

This study will complete gas solubility studies already underway for oxygen and the noble gases, and to measure the isotope ratios of the dissolved gases. To use other oceanic processes, several kinds of information are required in addition to the temperature, salinity and depth of a water sample: 1. Concentrations and/or concentration ratios of the gases dissolved in the sample. 2. Gas solubility coefficients and ratios as functions of the temperature and salinity, and 3. Concentrations of the gases in the atmosphere. The present research is designed to provide these measurements with an accuracy of 0.1 percent or better as required.

SUPPORTED BY U.S. Natl. Science Foundation

1.0100, IDENTIFICATION & DISTRIBUTION OF NATURALLY OCCURRING COPPER & LEAD COMPLEX IONS IN SEA WATER & SEDIMENTS AT EAST POINT, NAHANT, MASS

C. JANKOWSKI, **Northeastern University, School of Liberal Arts, *Boston, Massachusetts* 02115**

An anodic stripping analysis method has been developed for copper, lead and cadmium in sea water and in sediments. Samples taken at Northeastern University's Marine Science Institute are being studied. Equilibrium distributions and conversion kinetics are being investigated.

SUPPORTED BY Northeastern University - Boston, Mass.

1.0101, CARBONIC ANALYSIS IN SEA WATER

C.M. JANKOWSKI, **Northeastern University, School of Liberal Arts, *Boston, Massachusetts* 02115**

A method of direct carbonate analysis by ion exchange was developed. An investigation of sensitivity, accuracy and interferences in the method has been completed.

SUPPORTED BY Northeastern University - Boston, Mass.

1.0102, WATER RESOURCES OF THE COASTAL DRAINAGE BASINS OF SE MASS. - PART 1, HINGHAM TO KINGSTON; PART 2, PLYMOUTH TO WAREHAM (ABBREV)

J.R. WILLIAMS, **U.S. Dept. of the Interior, Geological Survey, *Boston, Massachusetts* 02203**

Purpose: To obtain and present hydrologic data and interpretations of these data for a better understanding of the hydrology to the physical and social environment for use in planning water projects.

Methods: Collect and synthesize ground-water, streamflow, and chemical data and prepare individual atlases and supporting basic-data releases for northern and southern parts of the area. Surface-water evaluations are based on two short-term stations, 20 low-flow sites, and correlation with long-term gaging stations outside areas with sub-basin geology. Ground-water availability is based on existing and current geologic mapping, subsurface data, pumping test analysis, and estimated transmissivity of the aquifers. Data on salinity of North-South River estuary and its variation with fresh-water inflow will be published in a by-product report (open file).

SUPPORTED BY U.S. Dept. of Interior - Geological Survey

1.0103, DETERMINATION OF THE APPARENT DISSOCIATION CONSTANTS OF CARBONIC ACID (K1' AND K2') IN SEA WATER

Y. LI, **Harvard University, School of Arts, *Cambridge, Massachusetts* 02138**

The apparent dissociation constants of carbonic acid in sea water will be redetermined via very careful determinations of alkalinity, total carbon dioxide, partial pressure of carbon dioxide, and pH. This work will yield a most up-to-date and reliable set of the dissociation constants that are needed for the studies in fertility of seawater, carbonates, and in carbon dioxide systems in the oceans.

SUPPORTED BY U.S. Natl. Science Foundation

1.0104, THE DISTRIBUTION OF CADMIUM IN THE OPEN NORTH ATLANTIC OCEAN

R. SIEVER, **Harvard University, Graduate School, *Cambridge, Massachusetts* 02138**

Cadmium is a trace metal of known toxicity in small doses and is known to have a long residence time in biological organisms. In this proposed study the investigator will obtain profiles of cadium across the Atlantic Ocean and relate these results to the type of sediments with the goal of relating the extent of danger from anthropogenic cadmium sources to the sediment type.

SUPPORTED BY U.S. Natl. Science Foundation

ENVIRONMENTAL PROTECTION AGENCY—CHESAPEAKE BAY PROGRAM

The Chesapeake Bay Program is a special short-term, intensive research project being implemented by the Environmental Protection Agency. Congress mandated it in late 1975 at the urging of Senator Charles Mathias of Maryland.

The purposes of the program are:

find out what the most serious environmental problems in the Bay are;
conduct research programs to find answers to those problems;
set up a system to store information about the Bay;
look at the agencies responsible for the Bay and at alternate governing structures;
make suggestions to the states on ways to improve Bay management.

The director of the Chesapeake Bay Program is Dr. Tudor T. Davies. His office is at 2083 West Street, Annapolis, Md.

His phone number is (301) 266-0077.

The Chesapeake Bay Program can be viewed as a "shot in the arm" for a troubled Bay. It is an infusion of $25 million to intensively study specific aspects of water quality in the Bay. Four areas have been agreed upon for concerted efforts:

toxics accumulation in the food chain;
submerged aquatic vegetation;
nutrient enrichment (eutrophication);
environmental quality management study.

Scientists from Maryland and Virginia are using EPA money to find out what kinds of poisonous chemicals are in the Bay, where they come from, why grasses have disappeared in some areas, and how too many nutrients may affect the oxygen level in the water. All of the research is directed toward finding answers that can be used by decision-makers, permit-issuers, planners, zoning boards, and others who regulate the land activities which affect this bountiful but pressured resource.

The Virginia State Water Control Board and the Maryland Resources Administration are the lead agencies for state involvement in the Chesapeake Bay Program. Each has personnel working full time to assist EPA in developing work programs and monitoring research. A new spirit of cooperation between the states has been one of the early products of the program.

To assist in finding out what the public thinks about the Bay and how they wish it to be used, EPA awarded a grant to the Citizens Program for the Chesapeake Bay, Inc. CPCB has offices in Hampton, Va. and Baltimore, Md. and has regional staff located around the Bay. These people want to know what you and your group think.

The Citizens Program for the Chesapeake Bay wants to hear from you. The Environmental Projection Agency needs to know what you think, helps us to tell them.

CPCB can provide: slide shows, films, speakers, posters, facts sheets, newsletters, and workshops.

Help us to preserve Chesapeake Bay!

Senator **MATHIAS**. The committee will stand adjourned, subject to the call of the Chair.

[Whereupon, at 12:22 p.m., the subcommittee was adjourned, subject to the call of the Chair.]

○